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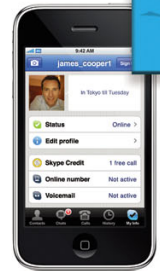
THREAT EVALUATION

How Much Harm Can Hackers Really Do? (P.30)

CLOUD COMPUTING

A Guide For Small & Medium-Sized Businesses (P.34)

SKYPE TALKS BUSINESS & Mobility (P.76)



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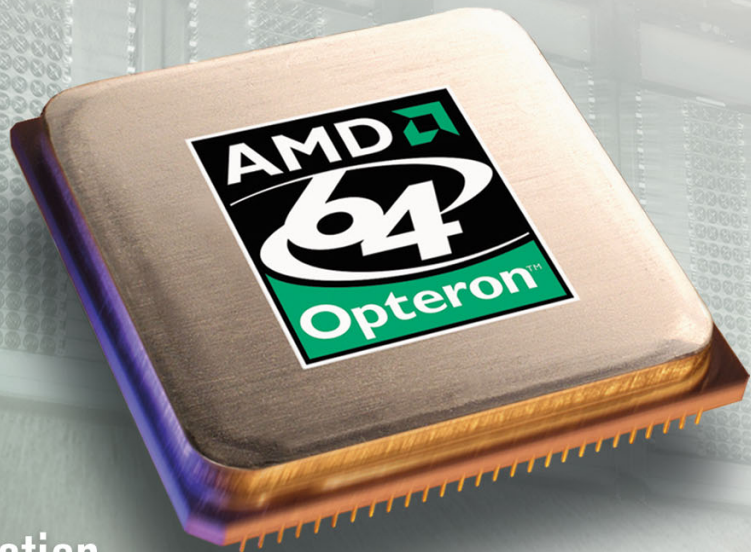
TECHNOLOGY FOR BUSINESS

AMD



Helps Your Business Do More With Less

AMD Discusses Virtualization,
Higher Performing Data Centers
& Cloud Computing



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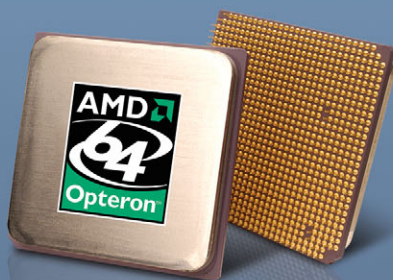
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AMD

AMD On Doing More With Less

When you think of AMD, the first things that come to mind might be CPUs and graphics processors. However, AMD's virtualization technologies and cloud computing initiatives are helping big business achieve greater ROI. Turn to page 8 for information about how AMD's business technologies can save your company money.



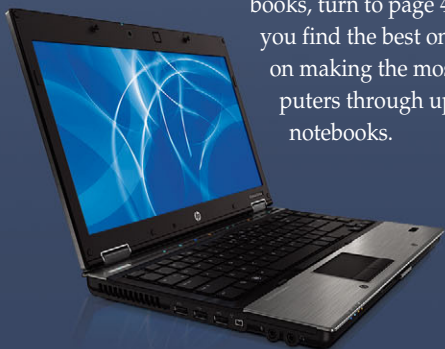
TOSHIBA

Toshiba In Focus

Although well-known for its laptop computers and storage hardware, Toshiba continues to make great strides in areas such as VoIP technology, document processing, medical imaging, and consumer electronics. Beginning on page 14, we explore the current state of Toshiba and take a closer look at the company's environmental endeavors.

Notebooks That Mean Business

If your company is in the market for a fleet of serious notebooks, turn to page 40 for articles that will help you find the best ones. We also offer advice on making the most of your current computers through upgrades and securing your notebooks.



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■ Cisco Launches Network Storage For Small Businesses

The Cisco Smart Storage launch marks a significant step for Cisco Systems as the company continues to extend its reach to smaller companies and even home users. The new storage line, dubbed Cisco Small Business NSS 300 Series Smart Storage, provides businesses with fewer than 100 employees with new, affordable, high-performance networked storage options.

■ Three Types Of Notebooks From Toshiba

Toshiba announced two upcoming models that cover different bases in the expanding market of notebook-like devices: the Libretto W100, which will have a touchscreen, double as an ereader, and compete in iPad territory; and the AC100, a netbook running Google's Android platform. A third model, already available, is the Portégé R700. The R700 is the more traditional of the bunch and is the latest Toshiba notebook to boast a super-thin form factor and long battery life. For more information about Toshiba's many other initiatives, see page 14.

■ Dell Offers Juniper Products & More For Data Centers

The first enterprise wireless products to come from Dell's OEM agreement with Juniper Networks are now available, as are new servers (two PowerEdge blades and one rack server) and numerous storage improvements. The storage announcements include new storage arrays in the PowerVault line for SMBs and enhancements to the EqualLogic line.

■ RIM Designing Different Devices

According to a *Wall Street Journal* report, BlackBerry-maker Research In Motion is working on new smartphones and experimenting with a tablet computer with an eye toward competing directly with Apple's newest iPhone and iPad. One of the BlackBerry smartphones is reportedly an iPhone-like touchscreen device with a slide-out keyboard.

■ HP Connects Smartphone, Cloud & Printers

HP's recent announcement takes wireless printing a step further than it has gone before.



By assigning an email address to its upcoming wireless printers and adding security features such as encryption, HP will make it possible to easily print from smartphones and from Web-based applications. The platform that will make this possible, ePrint, will soon be available in four HP All-In-One printers.

■ Chipmakers & Others Deliver New Mobile Platform

GlobalFoundries, semiconductor firm Synopsys, and chipmakers ARM, IBM, and Samsung together announced a new platform for developing microchips that will work in mobile devices. The design platform will enable the production of processors optimized to provide greater performance and consume less power than existing chips.

■ Adobe Makes Mobile Flash Player Available

As the heated war of words between Apple Computer and Adobe Systems wound down, Adobe finally released Flash Player 10.1 for smartphones. For the time being, the mobile video software will only work with select review units running the latest Android operating system, but it's likely manufacturers and developers will waste no time making it work on upcoming devices.

■ IBM Acquires Cloud Analytics Company

As part of IBM's push into the cloud computing space, the company announced it will purchase the San Mateo, Calif.-based Web analytics firm Coremetrics. The acquisition will complement IBM's ability to provide services that will help clients gain a greater understanding of how effective their marketing campaigns are. Coremetrics' clients include Bank of America, Holiday Inn, and Office Depot. All of Coremetrics' 230 employees will be integrated into IBM.

■ Nokia Siemens Sees 4G Future Sooner Than Others

Many—perhaps most—industry insiders will tell you that LTE (Long Term Evolution), the "4G" technology designed to bring greater speed, range, and clarity to your smartphone, is years away from ubiquity. Nokia Siemens begs to differ, however, as it has pushed through 30 commercial LTE network trials worldwide and plans to add 12 more by year's end.

■ Trend Micro Offers Real Protection For Virtual Desktops

Targeting enterprises that are virtualizing desktops and citing 2,400 new malware threats per hour, Trend Micro unveiled its new OfficeScan 10.5 software. It works for both physical and virtual endpoints, as well as on mobile devices and Macs, to protect against viruses, spyware, rootkits, and more while simultaneously preventing network, processor, and storage conflicts.



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■ IBM Opens Largest Development Lab Yet

IBM announced the opening of the IBM Mass Lab in Littleton, Mass., the company's largest software development lab in North America. The advancement of digital systems ranging from healthcare record management to smart grids are among the lab's primary goals. IBM cited collaboration, social networking, cloud computing, and analytics as additional areas set for development within the lab.

■ Qualcomm Brings Dual Cores To Smartphones

You're aware of dual-core processors in desktop and notebook computers, but how about smartphones? Qualcomm's recently announced additions to its Snapdragon family of mobile processors will include two dual-core CPUs that run up to 1.2GHz and one that runs up to 1.5GHz. The processors are designed especially for use in smartphones, netbooks, and other mobile devices.



■ SAP Ventures Invests In "Instant-On"

Splashtop is an "instant-on" operating environment for computers (particularly laptops and netbooks) that lets users do such things as access the Internet or place a call via Skype without fully booting the computer. SAP Ventures apparently sees promise in Splashtop, as it has led a \$10 million investment in DeviceVM, the company behind Splashtop.

■ Google Says Chrome Will Be Ready

The timing may never be perfect for a new computer OS, but with so many changes underway in the sizes and types of devices we carry, the timing looks pretty good. Google announced its Chrome OS will be ready later this year, possibly just in time for heavy consumer shopping times. Chrome will be a lightweight OS that stands to compete especially well with Microsoft and Apple on smaller devices such as netbooks and slates.

■ Intel Offers Souped-Up Netbook Chips

The newest chips in Intel's family of Atom processors include a mobile dual-core processor (code-named Pine Trail) and a power-saving system-on-a-chip (code-named Oak Trail). The new offerings should help Intel compete strongly in the netbook and tablet markets as they heat up in the coming months. Particularly interesting are the Oak Trail chips, which can offer a 50% reduction in power consumption while supporting high-def video and platforms as diverse as Microsoft's Windows 7 and Google's Android.



■ HTC Potentially Ups Branding Ante With Acquisition

HTC, known as a top manufacturer of Windows- and Android-based smartphones under its own and others' brands, recently acquired Paris-based Abaxia (which also counts Nokia, Motorola, Orange, and Vodafone as customers) for an undisclosed sum. This is a potentially important move for HTC in taking control of the home screen on its HTC-branded smartphones because Abaxia develops interfaces with that sort of consistency in mind.

■ Big News, Small Devices From Samsung

Samsung Semiconductor announced three new storage products, including a fast internal Blu-ray player and what Samsung is calling the world's smallest desktop optical drive. The third new product is the Spinpoint F4 hard drive, which holds 320GB on one platter and is

designed to be more reliable than previous drives because it has far fewer moving parts.

■ McAfee Purchase To Expand Mobile Control

Security software firm McAfee announced plans to acquire Trust Digital for an undisclosed sum. This will give McAfee access to Trust Digital's secure mobile networking platform, which enables IT staff to manage and secure devices using a variety of platforms—Android, iPhone, Nokia Symbian, Palm webOS, and Windows Mobile—as they would full-sized desktop and notebook computers.

■ Starbucks Explores Digital Options

Starbucks plans to launch an "online customer experience" called Starbucks Digital Network this fall. The result of a partnership with Yahoo!, the network will include access to a variety of content ranging from music samples to *The Wall Street Journal*. And in advance of the launch, Starbucks has made its AT&T wireless Internet service available free to customers in all of its 6,700 U.S. stores.

■ Big Companies Push Leverage For Linux

Although Linux is open-source, the OS is hardly non-commercial. Its potential for smaller devices, consumer electronics, and appliances has always been vast, and now a group of manufacturers—ARM, Freescale, IBM, Samsung, ST-Ericsson, and Texas Instruments—is throwing weight behind Linux in the form of Linaro, a foundation to spur development and rollouts of Android and other Linux-related OSes in various electronics.

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KEY POINTS

▲ Cloud computing is a form of pay-as-you-go Internet-based computing in which shared resources are owned and allocated by the service provider, and in which those resources are charged for as they are consumed.

▲ Virtualization is a way of gaining efficiencies by running multiple “virtual” systems on one physical box.

▲ Cloud computing has its roots in 1960s time-share computing models, but new technologies, such as virtualization, offer efficiencies and functionality impossible until now.

▲ Chip makers are creating specialized processors designed to allow systems to power virtual servers more efficiently. AMD in particular has concentrated on creating chips that both manage power efficiently and provide onboard virtualization features.

AMD server-class processors include virtualization and power-management features geared toward powering cloud computing offerings.



Virtualization, **CLOUD** **COMPUTING** *& Your Company*

A Primer On AMD's Business Technologies

by Rod Scher

Everyone is talking about the cloud. They have to be on it. *You* have to be on it. Cloud computing is all new and all powerful, and the technology will save your business.

And yet . . . In the end, cloud computing is really just a sophisticated form of outsourcing in which, instead of buying systems or software, you conduct business by using someone *else's* systems and software. But it's a form of outsourcing so abstract that it is in effect a leap of faith: It involves paying good money to run programs you never see, on systems you never touch, to access data the location of which is unknown, and all of it managed by people and processes over which you have no control. No wonder the idea sometimes unnerves managers and executives.



▲ AMD server-class processors include virtualization and power-management features geared toward powering cloud computing offerings.

So what is cloud computing, exactly? And what part does virtualization play in it? We'll define some of these overused (and occasionally misused) terms, briefly explain the technologies, and then look at what AMD is doing to take advantage—and to help *you* take advantage—of these new tools.

Living In The Clouds

Essentially, cloud computing is an Internet-based undertaking in which resources are used (and charged for) as they are consumed. In effect, it's a way to provide pay-as-you-go software or infrastructure services that requires almost no capital investment on the part of the business utilizing the cloud-based service.

However, this is nothing new. Back in 1960, Stanford University computer scientist John McCarthy commented, "Computation may someday be organized as a public utility," and indeed many have drawn comparisons to the time-sharing systems of yesteryear. In both cases, we're describing a system that allocates resources on an as-needed basis, charging as those resources are consumed, and requiring of the user very little in the way of investment. Both the old model and the new involve a remotely hosted system in which data and the systems that access or create that data reside not in a business's closet-sized server room, but "out there" somewhere.

Margaret Lewis, AMD's director of software solutions marketing, puts it this way: "Cloud computing is a computing model where data, applications, and services are delivered to consumers or businesses using Internet technologies."

Consider a Web hosting company that provides email servers for multiple smaller companies. While corporate users access their email as if it were located on a company server, that email may actually be located on multiple servers scattered across the globe, depending on where the provider found the best hosting and storage rates.

That's cloud computing: an outsourcing scenario in which you normally neither know nor care where your data lives, and in which that data is acted upon or generated by applications that are running elsewhere.

Virtualization: Do More With Less

Virtualization is *not* the same as cloud computing, although the terms are sometimes used

synonymously. Virtualization is a way of consolidating resources and getting more performance out of a computer by fooling it into thinking that it's really *several* computers.

As AMD's Lewis puts it: "Virtualization is the abstraction of software from hardware. Today we most often use the term . . . to describe when a physical computer is divided into virtual machines that can each run its own operating system and applications."

"Think about a business that has a large data center," says Lewis. "They're expanding and growing their business, but the actual physical size of the data center can't get any larger (unless they actually add physical real estate to it). Well, if you have 100 servers, all running one application, you can do a couple things: Either take those 100 servers and virtualize [each of] them to run, let's say, five virtual machines; those 100 servers now act like 500, giving you room for growth within the same space and power footprint. Or, you can consolidate 100 servers down to 20, again running five virtual machines so they still perform like 100 servers, but you just freed up 80% of your data center real estate and helped to reduce power and cooling requirements."

Except for certain peak load-times, most CPUs, storage, and other system components are underutilized. Virtualization, running multiple systems on one physical box, is a way of sharing system resources in order to ensure that a system's resources are being utilized efficiently.

AMD: Facilitating Cloud Computing & Virtualization

Virtualized servers are the backbone of cloud computing. Cloud providers need to get the most from a set of finite resources so that they can maximize the return on their substantial resource investment and help keep down the costs of powering and maintaining all of those servers. In turn, the reductions in cost are passed on to you, the consumer of the services provided by the cloud-based vendor.

In other words, on top of the abstract notion of multiple remote servers serving up applications and data is yet *another* layer of abstraction: Each physical box is doing the work of several, because each actual server may *contain* several virtual servers.

Achieving an efficiency that allows this level of performance itself requires powerful tools and technologies, and AMD is pioneering products meant to enable cloud providers to get the most out of their investment so that you can get the most out of yours.



▲ Margaret Lewis is AMD's director of software solutions marketing and an expert in virtualization and cloud-based computing.

In particular, AMD has created tools that work with the company's processors to help manage and allocate power consumption based upon current needs, and which allow systems to more efficiently virtualize.

The AMD Power Management Suite. "Dual Dynamic Power Management and AMD PowerNow are both power management features of our power management suite, AMD-P," says AMD's Lewis. "This includes a number of different innovations that help the processor know when it can scale back on the amount of power it is consuming, depending on how demanding the application is at the moment. Power management is important for SMBs in several ways: It can help to reduce power and cooling costs . . . and it also helps to reduce noise."

Noise reduction may sound minor, but it turns out to be very important, according to Lewis. "Keep in mind that many small businesses are running servers outside of traditional computer rooms, so the noise factor is important to them."

AMD Virtualization Technology. In addition to power management, AMD processors provide features that allow more efficient virtualization. One of those is AMD-V, or AMD Virtualization Technology.

Lewis says, "AMD-V is a set of on-chip virtualization features that help AMD processor-based servers and clients run multiple applications or user sessions on a single machine by improving the efficiency of virtualization software. AMD-V technology allows customers to better utilize their resources, which makes client systems, servers, and data centers more effective."

While power management and virtualization sound like—and indeed are—very different things, they are nonetheless interrelated. The cost savings and efficiency gains one realizes as a result of virtualization are enhanced, notes Lewis, if the servers you are consolidating are also energy-efficient: "For SMBs, virtualization technology is starting to

go beyond basic consolidation and can provide a cost-effective way to achieve better management and business continuity."

New Approaches, New Technologies

Although cloud computing is at its core basically a new form of outsourcing, its effects have been and will continue to be enormous; it would be a mistake to minimize the current and future impact of the cloud-based approach.

Lewis says, "I think to a degree you can say that going into the cloud is another way of outsourcing, but I don't want to downplay just how revolutionary cloud computing is. It's a dynamic new computing model that can really change the way IT systems are designed and deployed. As far as how customers look at whether or not they should be outsourcing, or how they look at cloud models, that's going to change from customer to customer. At AMD we work closely with our software and hardware partners to help ensure our products are adapting to the evolving computing landscape, as well as providing the right tools and education to help our customers make the right decisions."

There's no doubt that the potentials of cloud computing and virtualization are enormous, and neither is there any doubt that the two are interrelated. So, exactly how does a company like AMD go about helping power the cloud-based model? How does it provide the increased power and efficiency required by cloud-based software and infrastructure services?

Part of the answer has to do with the power and available features of the microprocessors being used by the myriad servers that power the cloud. AMD has determined that what is needed is a processor that can do many things simultaneously and do them well, and which can do so while balancing the needs of both the end user and the service provider. The company's AMD-V and AMD-P feature sets are two approaches that AMD is using to address those needs. ▲

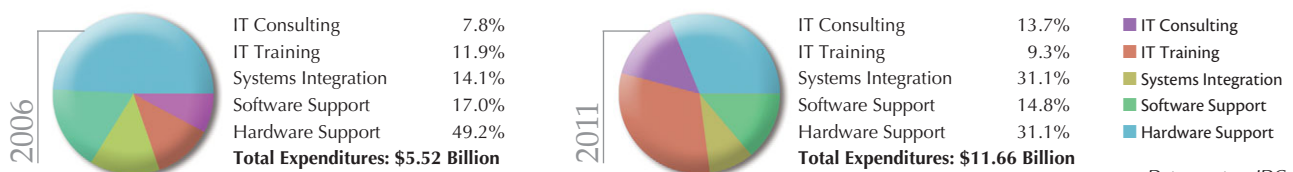
POTENTIAL BENEFITS OF CLOUD COMPUTING

Cloud-based computing is not the silver bullet that some providers might have you believe. But it can be a useful, cost-effective means of offloading functions and infrastructure to providers specifically set up to provide them. In a best-case scenario, here's what you could gain by moving to the cloud.

By moving to the cloud, you could...

- ▲ Reduce power and cooling costs
- ▲ Minimize data center space and overhead expenses
- ▲ Maximize your current software investment
- ▲ Streamline deployments and upgrades
- ▲ Improve performance, manageability, and data security
- ▲ Simplify your infrastructure of server and client systems

Growth of Virtualization, 2006 to 2011



Higher Data Center Performance At A Low Price

KEY POINTS

▲ The Opteron 6000 Series offers both eight-core and 12-core processors.

▲ There's increased support for memory bandwidth, so you can use a greater number of memory modules.

▲ You can save money by reducing the amount of servers for a given task, and there's no luxury tax for 4P systems.

▲ All the models in the Opteron 6000 Series support all the same high-tech features, so you won't lose functionality as you move down the pricing tiers.



How AMD's Opteron 6000 Series Can Help Save Your Business

by Nathan Lake

When you're investing in a server platform, you have much more to consider than performance; you also need to take into account power efficiency and initial cost. With the Opteron 6000 Series platform, AMD delivers a jump in performance while still maintaining the energy-efficient 80-watt design and affordable pricing that has made the Opteron series such a value in terms of performance per watt and performance per dollar. Here, we'll examine how the Opteron 6000 Series can improve your business.

What's New With The 6000 Series

"The Opteron 6000 Series is the second wave of innovation," says Gina Longoria, director of product management for AMD's Server and Workstation Division, "and we're offering more cores and more memory for less money with a new server platform." For example, in comparison to AMD's lineup of Six-Core and Quad-Core Opteron lineups, the Opteron 6000 Series platform features both eight- and 12-core processors, and all the new models offer similar clock speeds to the previous-generation Opteron models. Overall, the new 12-core Opteron 6100 Series processors can offer up to a 61% performance increase over the six-core Opteron 2400 Series.

"The Opteron 6000 Series platform is also great for memory-intensive applications, because of the memory footprint availability," says Longoria. AMD's Direct Connect Architecture 2.0 allows the Opteron 6000 Series processors to support four memory channels and up to DDR3-1333MHz speeds; the higher bandwidth for memory helps

programs run faster. Direct Connection Architecture 2.0 also supports up to 12 memory modules to help you reduce the amount you spend on RAM. For instance, let's say your IT staff says that they need 48GB of RAM for a cloud computing server. It'd be significantly cheaper for you to invest in 24 2GB memory modules than it would be for 12 4GB memory modules because the cost rises with the larger-capacity chips. The greater amount of memory channels also gives your IT staff the ability to fill the server with more memory than has traditionally been available in the past.

Extra Savings

Longoria told us that "2P [two-processor] servers are the bulk of the market, at around a 75% share, and many customers haven't looked into 4P [four-processor] servers, because processors that were compatible with 4P servers had a luxury tax." The Opteron 6000 Series processors are compatible with servers that can utilize one, two, or four processors, so the price of the equipment won't jump up just because you're building a high-performance server. The Opteron 6000 Series processors are also priced in a way that makes it possible for you to purchase servers with four processors without breaking the bank. The affordable cost is ideal for businesses on a budget that still demand high-performance computing for tasks such as virtualization or database and business applications.

AMD also told us that with 26 servers, the Opteron 6100 Series can deliver the same type of performance you'd get with 42 servers filled with AMD's previous-generation six-core Opteron 2400 Series. The reduction in server count means that



you can lower your operating costs to power and cool the servers by up to 54% without lowering the performance for your enterprise. Based on the above example, AMD estimates that your company would save around \$14,000 over a three-year period.

Performance Upgrades

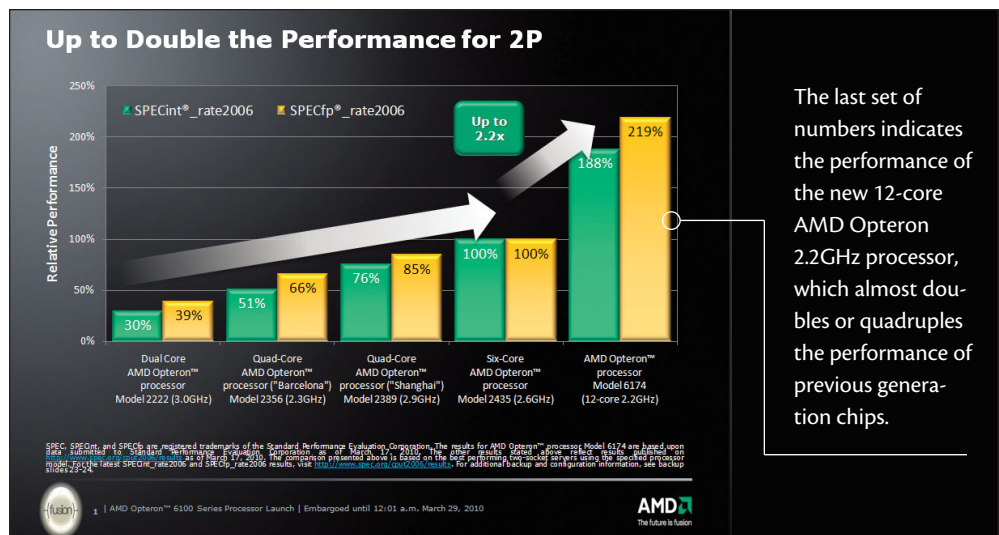
"AMD has also scaled the entire platform, not just the additional cores, so that the server can truly take advantage of the additional processing power," says Longoria. For example, the

processor's 16-bit HyperTransport 3.0 technology allows all your memory modules to run at their full speed, whereas some previous server technology forced the server to reduce the link speed for some RAM. Other improvements include version 2.0 of APML (Advanced Platform Management Link), which provides a way for IT staff to control server resources, manage power, and monitor heat levels.

Consistency

"No matter what Opteron 6000 Series processor you

select, you know what you're going to get, because the processors all support the same memory speeds, same input/output speeds, and all of the same features," says Longoria. The chips also feature the same chipset, BIOS codes, and drivers, so you can have a mixed deployment throughout your infrastructure to help you avoid compatibility issues. In short, you won't have to deal with any tradeoffs or lack of core features if you select a lower frequency or eight-core option. ▲



KEY POINTS

▲ Toshiba's business extends far beyond the notebook and television markets, thanks to its presence in digital imaging, LED display systems, UPSes, semiconductors, and other areas.

▲ IP-based communication technologies let businesses take advantage of their existing network, and Toshiba's Strata products are built to flex with those networks to accommodate varying business needs.

▲ As the inventor of NAND flash, Toshiba continues to be an innovator in the solid-state drive market, but the company also plays a big role in other areas of the storage industry.

▲ With a unique performance-boosting architecture at their core, Toshiba's e-Studio multifunction printers let office users perform a variety of tasks—all at the same time.

This multilevel cell, NAND flash-based solid-state drive launched in 2008 and was the largest-capacity SSD to be featured in notebook PCs at the time. Toshiba is known for inventing NAND technology.

Beyond Notebooks

A Closer Look At The Toshiba You Never Knew

by Christian Perry



A quick scan through your Sunday newspaper's circulars will reveal the usual Toshiba suspects—notebooks and televisions. But a more thorough look at this massive company unearths a mind-boggling range of products and technologies that serve to make Toshiba a well-known contributor to various markets and industries.

For example, along with its well-known laptops, televisions, and other consumer products such as digital video recorders and even digital media frames, Toshiba is also deeply entrenched in the medical imaging field, where its ultrasound, X-ray, tomography, and related technologies are used in medical institutions across the country, including John Hopkins in Baltimore, Md. The company also offers LED display systems (one of its screens graces the outside of the One Times Square building), UPSes (uninterruptible power

supplies), and a huge selection of semiconductors and similar components.

On the business front, Toshiba is also a big player in the telecommunications, storage, and document processing fields. We'll now take a more detailed look at the company's innovations and offerings in these areas.

IP Communications

The communications infrastructure in the average enterprise looks far different today than it did a decade ago, due mostly to the rise of IP-based technologies. By shifting voice communications to the network—the same network that's already typically well-tuned and well-maintained—organizations can save money, integrate voice more effectively with other systems, and help to unify their overall communications infrastructure for greater efficiency.

ESSENTIAL BUSINESS TECH

EXECUTIVES, PROFESSIONALS & ENTREPRENEURS



The Telecommunication Systems division of Toshiba America Information Systems (www.telecom.toshiba.com) is deeply rooted in the IP voice market, targeting primarily small and medium-sized businesses, as well as regional locations of large corporations. The company's products revolve around the Strata line of IP telephone systems, but Toshiba also offers call center applications (including reporting and monitoring), along with voicemail systems and video collaboration and communication tools.

Toshiba aims to have the most reliable, durable, and longest-lasting phone systems in the industry, says Larry Meyer, vice president of sales and marketing for the Telecommunication Sales Division, adding that the company is ranked second in IP system shipments by Infotrack. Further, he says that Toshiba is also known for having an exceptionally long manufacturer's warranty on its phone systems (seven years) and also for its extensive national accounts program, which covers every state with consistent systems and affordable pricing, regardless of location.

The Strata CIX IP Communications Systems family covers five systems that support between four and 440 trunks and between eight and 1,000 telephones, depending on the configuration for each system. For example, the Strata CIX40 IP system features a base configuration of eight, 16, or 24 IP channels, eight to 16 digital telephones, voicemail and auto attendant (including message call

monitoring, LCD feature prompting, soft keys, and call recording), and Call Center, which is designed to help staff efficiently handle customer calls.

These systems also include the ability to connect with advanced applications found on Toshiba's Media Application Server. These include unified messaging, fax integration, automated speech recognition, IVR (interactive voice response), TTS (text-to-speech), browser-based administration, and other features that can help IT staff personalize their company's voice infrastructure to the business.

Toshiba also has a wide range of call center applications that can route calls according to various factors. For example, businesses can route calls based on caller ID, account numbers, private lists, balanced call count, time of the day/week/year, and other factors. Also, routing can occur based on skills so that the right personnel receive the right calls. Other call center applications include call recording and logging to improve training and avoid disputes; integration of telecommunications with PCs to manage call functions and synchronize with CRM or contact software; and analysis tools that let managers analyze agent performance, call center group activity, and system status.

Storage

For some, Toshiba might not immediately come to mind when discussing hard drives and other storage devices, but the company has a long history

Regardless of your communications infrastructure, Toshiba likely has an IP-based system that can integrate with your environment. For small and medium-sized business, the Strata CIX200 has a base configuration of 96 channels and includes voicemail, auto attendant, a call center, and other features designed to streamline company communications.

of innovation in this market segment. In fact, it's Toshiba—and not one of the other well-known storage companies—that's responsible for a cutting-edge technology that continues to shape the storage landscape.

"Toshiba is the inventor of NAND flash," says Amy Dalphy, hard disk drive marketing manager for Toshiba America Information Systems (www.sdd.toshiba.com). "And we are one of two hard disk companies that own flash wafer fabrication plants—crucial to the long-term share of the solid-state disk market."

NAND flash memory, which is now the primary flash technology used in the bulk of today's solid-state drives, was unveiled by Toshiba in 1987. Since then, the technology has sparked the rise of removable media formats such as SmartMedia, Secure Digital, miniSD, microSD, MultiMediaCard, and others, as well as the aforementioned SSD, which is quickly growing into a

high-performance alternative to conventional hard disk drives.

But Toshiba's storage innovation doesn't begin and end with NAND, Dalphy says. For example, in 1998, the company introduced the first hard disk drive that utilized GMR (giant magnetoresistive) heads; in 2001, it began volume production of the first automotive hard drives, with 9 million units shipped to date; in 2000, it launched the first high-volume 1.8-inch hard drive, helping to spark the digital music revolution; and in 2005, Toshiba became the first company to commercialize PMR (perpendicular magnetic recording), which delivers more storage capacity in the same footprint.

Along with these and subsequent innovations, the company also works to ensure vendors and customers can remain competitive in a perpetually competitive market. "We are virtually vertically integrated and enjoy unique partnerships with key

Toshiba's Strata systems not only support digital telephones, but also analog telephones, analog and digital PSTN (Public Switched Telephone Network) interfaces, IP network interfaces, and SIP trunks.



Toshiba's range of multifunction printers accommodates businesses of virtually any size, including big, busy enterprises. This e-Studio555 can handle an impressive 55 pages per minute, holds a maximum of 7,600 sheets, and has a 450,000 monthly copy volume.





component vendors, allowing us to achieve time-to-market with the leanest staffing. Toshiba has participated in volume markets, as do other storage vendors, but we also innovate unique niche market solutions that enable our customers to achieve valuable differentiation in the marketplace," Dalphy says.

Such niche products include 1.8-inch drives for portable media players, digital video cameras, and ruggedized PCs, as well as automotive storage solutions. Toshiba also has a large line of portable external hard drives, including the new Canvio series with capacities ranging from 500GB up to 1TB. The company also has a large range of enterprise hard disks, including 3.5-inch, 2.5-inch standard, 2.5-inch self-encrypting, and 2.5-inch extended duty models, as well as 2.5- and 1.8-inch SATA and PATA hard drives designed for PCs and notebooks.

Document Processing

If you've worked in an enterprise setting in the past 10 years, chances are decent that at least one of your documents made its way through a Toshiba printer, scanner, or fax machine at one time or another. Founded in 1999, Toshiba America Business Solutions (copiers.toshiba.com) is an independent operating company of Toshiba and offers a range of multifunction devices, scanners, fax machines, and managed print services that are geared for both smaller business and big enterprises.

The e-Studio product line serves as the core of Toshiba's document processing efforts, with models covering every business market segment and prices ranging from about \$1,300 to \$60,000. These multifunction printers are designed to ease complex management of document processing tasks through unique user-friendly features that allow the devices to integrate seamlessly into virtually any office environment.

A central technology in the e-Studio line is e-Bridge, an architecture that boosts the power, speed, control, and security of e-Studio printers and allows users to simultaneously print, copy, scan, and fax. The e-Bridge Open Platform links e-Studio printers to back-end applications and systems, such as ERP (enterprise resource planning), document management, and fax servers. This system in turn simplifies office workflows and helps to meld the multifunction device with the office by bringing entire paper-based workflows to the MFP. Toshiba has also injected what it calls the "human-centric" concept into its e-Studio models. Based on the e-Bridge architecture, this concept focuses on user-friendly capabilities that give users the power to succeed in real-life office situations.

Although business users are no doubt concerned about the performance and usability of printers, scanners, and other document processing devices, this segment has come under scrutiny in recent years for its negative impact on the environment. However, Toshiba has made serious strides in helping to diminish this impact, from toner recycling to greener products and manufacturing. For example, the company has a partnership with Close the Loop, a zero-waste-to-landfill program that provides complete recycling of consumables such as cartridges, drum units, and toner bottles. ▲

This portable, external 160GB hard drive from Toshiba works right out of the box and includes an internal shock sensor and ramp loading technology that helps to protect the drive in case of accidental drops or bumps.



In addition to reducing power usage, moving from standard platter-based hard drives to SSDs (solid-state drives) can provide a performance boost for end users.

Toshiba's Green Commitment

People, Planet, Profit

by Tom Nelson and Mary O'Connor

KEY POINTS

▲ With three bottom lines (People, Planet, Profit) as its corporate goals, Toshiba is able to address community and environmental concerns and still create a profitable business.

▲ Group Environmental Vision 2050 is Toshiba's commitment to reducing carbon emissions by creating eco-efficiencies in its products, services, and processes.

▲ To meet its energy goals, Toshiba must stabilize its sources of energy by committing to the development of clean environmentally friendly energy sources, such as solar, thermal, and nuclear.

▲ Eco-products aren't a special division but a goal across all of Toshiba to create eco-efficient products that not only help Toshiba's bottom line but meet or exceed Toshiba's Group Environmental Vision 2050 goals.

Corporations have long wished to be seen as good citizens. They promote local and regional events or support local or national causes, all in an effort to positively affect how current and potential customers perceive them. In essence, many corporations want to be perceived as socially responsible.

Corporate Social Responsibility

Toshiba takes social responsibility to the next level, not only by lending a helping hand to communities, but also by modeling its entire management structure around the concept of Corporate Social Responsibility. CSR-based companies accept, even embrace, the impact they have on the environment, their communities, employees, and stockholders. In doing so, they also tend to increase their profits, in part because customers like and respect the company, but also because in reducing their impact on the environment, they tend to reduce their costs, both short- and long-term.

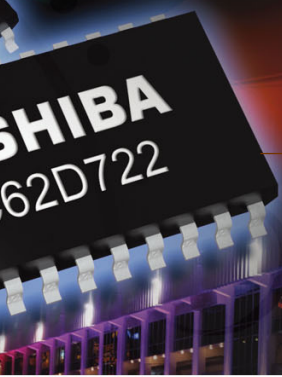
Toshiba, one of the leading worldwide technology companies, considers itself a "corporate citizen of the Earth." That's more than a catchy phrase. Toshiba's CSR strategy permeates the entire company, from the CEO to the newest employee, and demands that both individuals and the company as a whole follow guidelines for workplace ethics and behavior.

As part of its CSR strategy, Toshiba realizes that in order to remain a vibrant and strong corporation, it must help set standards and look to the future with keen vision and focus. To that end, Norio Sasaki, president and CEO, affirms Toshiba's commitment to the environment:

"One of our core commitments is the Toshiba Group Environmental Vision 2050, with an aggressive goal of raising the eco-efficiency of our products and business processes 10 times by 2050."

This commitment drives how Toshiba designs, makes, and sells products and services. It has also led Toshiba to enter new markets with new products and services, just so it can meet its environmental goals. In entering markets, Toshiba has seen new profits, because its management





structure demands a constant consideration of the public good and the environment.

Toshiba Group Environmental Vision 2050

Toshiba's environmental vision is a good example of a corporation engaging in what at first appears to be noneconomic social values. But actually, Toshiba realizes that reducing its environmental impact produces a better bottom line. In fact, this can be called a triple bottom line (People, Planet, Profit), something many companies attempt to achieve.

Toshiba defines eco-efficiency as a measure of the environmental impact of a business process or product relative to its value. Because Toshiba applies its eco-efficiency to both the products it sells and its own internal business processes, every endeavor it undertakes is measured against eco-efficiency and Environmental Vision 2050 goals. Toshiba plans to meet these goals using two main approaches: energy and eco-products.

Energy goals. Toshiba's energy goals are designed to replace many existing energy sources with cleaner, more stable energy supplies. To that end, Toshiba announced in early 2009 that it would enter the solar-photovoltaic business. Instead of concentrating on building solar-photovoltaic panels, Toshiba will initially design and build utility-scale solar power plants. This is the type of power plant Toshiba will need to help stabilize energy sources for its own facilities as well as the community at large. The use of solar as an energy source will help Toshiba meet its environmental goals by reducing its overall carbon footprint. Toshiba believes its new photovoltaic business, which will be part of the existing Transmission Distribution & Industrial Systems group, can record \$2.2 billion in sales by the end of 2015.

In a solar-related move, Toshiba will begin reselling residential solar panels in Japan. These are only two of Toshiba's solar-based initiatives, but they will help the company meet its eco-efficiency

Toshiba's LED driver/controller makes it easier to create LED-based lighting products, which in turn helps make LED lighting economical.



Using a Direct-Methanol Fuel Cell, the Dynario can power devices in places where conventional power sources aren't available.

The Toshiba TRV2012E LED Display System for indoor and outdoor use can significantly reduce power consumption.

goals by stabilizing energy sources and making a nice profit in new ventures.

Solar isn't the only energy system Toshiba is eyeing. It already has a nuclear-power component, which it beefed up by purchasing Westinghouse Electric from British Nuclear Fuels in 2006. Toshiba is involved in the two primary types of reactor vessels in use: PWR (pressurized water reactor), acquired in the Westinghouse purchase, and its existing boiling water reactor design. Toshiba expects its new nuclear offerings to provide \$6 billion in sales by 2015.

Toshiba may be the first company to build a nuclear reactor in the U.S. to be used for public production of electricity. In a surprising move, Toshiba offered the small community of Galena, Alaska, a 10-megawatt nuclear reactor free, provided Galena pays the operating cost, which is predicted to be about 10 cents a kilowatt hour. Toshiba's 4S reactor (Super Safe, Small, and Simple) will be installed underground. The 4S is a liquid sodium-cooled design that is low pressure and self-cooling. It is self-contained, with no moving parts and no need to be refueled. Placing it underground will allow the heat generated to be dissipated by the earth, should a cooling problem occur during the reactor's expected 30-year lifetime.

The 4S reactor could be a model for small nuclear reactors. Small communities or large industries could use it to meet the majority of their electrical needs. The carbon footprint from the 4S reactor itself is essentially zero.

Eco-products. Toshiba uses a system called the Eco-Efficiency Factor to measure product eco-efficiency. In its simplest form, the factor is the value of a product as assessed using the QFD (Quality, Function, Deployment) method, multiplied by the Environmental Impact Reduction Factor using the LIME (Life-cycle Impact Assessment Method, based on Endpoint modeling) method. This produces the factor, which measures the degree of improvement over an earlier benchmark product of the same type.

Toshiba seeks to increase the factor of all its products to an average of five by 2025 and 10 by 2050. This will minimize the environmental impact of manufacturing the products, reduce greenhouse gases, and stabilize or reduce energy needs.

CO2 Reduction

If Toshiba meets its first set of goals by 2025, it expects to reduce CO2 emissions by about 120 million tons per year. Eighty-two million tons are expected to come from its energy approach and 35.7 million from producing eco-efficient products.

In 2008, Toshiba was able to reduce its carbon footprint by 13.5 million tons per year. It hopes to see 2012 come in at a 27 million ton reduction.

Eco-efficiency has also produced results, as measured by carbon footprint reduction, with a 3 million ton reduction in 2008 and an expected 7.3 million ton reduction in 2012.

Recycling

Toshiba uses recycled materials in its products and processes and encourages end-of-life recycling of its products. In order to facilitate easy recycling of end-of-life products, Toshiba partners with MRM (Manufacturing Recycling Management) companies, PC trade-in programs, and battery recycling using Call2Recycle, a service of the RBRC (Rechargeable Battery Recycling Corp.).

To Infinity & Beyond

Toshiba has been at the forefront of environmental challenges since the 1990s and has ranked well in various environmental surveys over the years, including the Greenpeace Guide to Green Electronics, which measures the efforts of companies trying to clean up their products by eliminating hazardous substances, promoting recycling of their products, and reducing the climate impact of their operations. Greenpeace, however, only looked at consumer products. Toshiba's goals are far more comprehensive, applying to all products, services, and processes in every division and group. ▲

Virtualization & ROI

Doing More With Less

by Bridget Mintz Testa

DESKTOP VIRTUALIZATION seems to be growing by leaps and bounds, and some say this year may be the year for it. John Sloan, lead research analyst for Info-Tech Research Group, says, "2010 is a pivotal year for virtual desktop infrastructure. Its limitations are being overcome."

Virtualization 101

Several forms of desktop virtualization exist. The most common is the remotely hosted desktop, which includes a server, some kind of access device sitting on the end user's desk, and a network connecting the two. "The server runs virtualization software on top of an operating system," says Steve Brasen, senior analyst in systems management for Enterprise Management Associates. "The virtual software has a set of environments, that is, desktops, with applications. Virtualization leverages one copy of the operating system and one copy of the environment. The user can tailor his or her desktop environment." The access device can be a PC, a laptop, or a thin client.

When Virtualization Isn't Ideal

Even though thin clients will likely cost your company less than PCs, and they will use a lot less power, too, "the lower thin client cost is partly offset by the need for more server and storage capacity," Sloan says. "When you add it all up, the virtualization solution may reduce costs by 5 to 10%."

Virtualization is not an ideal environment if you often use graphics programs as part of your job. "Big graphics applications can suck the life out of a data center," says Gartner Vice President Stephen Kleynhans. Indeed, working with graphics across a network can eat up so much bandwidth that it interferes with the apps your co-workers may be using, and the graphics tasks may still take forever. Then there are mobile workers. "The problem for mobile users is that they don't always have access to a network," Kleynhans says. Yet they still need computing power on their mobile computers and the ability to sync with the office whenever possible. "You need a virtual machine on your laptop," Kleynhans explains. "Then when you come back to the office, you synchronize with and update what's on the server." According to Kleynhans, desktop virtualization technology can't do that right now.

Despite these problems and the complexity of desktop virtualization, companies still are adopting the technology because it has significant benefits.

Benefits

You can save capital, for example, if you have excess servers, and that happy coincidence isn't so unusual. "Often, people will look at [desktop] virtualization after they've had some success with server virtualization," Sloan says. Server virtualization means you've already combined a lot of tasks running on, say, 20 servers, down to perhaps four or five servers. You can use the rest to support desktop virtualization. Not having to buy servers means replacing PCs with thin clients will save you money.

Operational expenses are where virtualization really pays off, though. "It is much easier to update or upgrade an operating system, applications, etc., on a server, which updates each client by updating the virtual desktops instead of by updating a bunch of individual PCs," Brasen says. "This also applies to patching and applications, whether you're updating them or loading them."

Operational savings keep coming. "Bigger savings come from desktop support, where the desktop is actually on a virtual machine on a server," Sloan says, "and in provisioning new users, which involves just a virtual desktop, not a new PC. This increases efficiency in terms of roll-outs."

To realize these benefits, your management solution must be "virtualization-aware," Brasen says. If it isn't, instead of updating all the virtual desktops, applications, and operating systems at once, the system will individually update each virtual PC as if it were actual hardware.

The three leaders in the desktop virtualization space, including the management solutions, are VMWare, Citrix's Xen software, and Microsoft's Hyper-V. "The two big players—VMWare and Citrix—both have a pretty complete stack of offerings," Kleynhans says. "They also have the management tools to make it work."

The limitations Kleynhans noted could disappear very soon. "The whole area of hosted virtual desktops is only about four-and-a-half to five years old, and it's maturing rapidly," he says. ▲

KEY POINTS

- ▲ Several forms of desktop virtualization are available; hosted desktops are the most common
- ▲ Users can access a virtual desktop on a legacy PC, laptop, or thin client, for example
- ▲ Desktop virtualization saves on operational expenses
- ▲ Citrix Xen, Microsoft Hyper-V, and VMWare are top players in desktop virtualization



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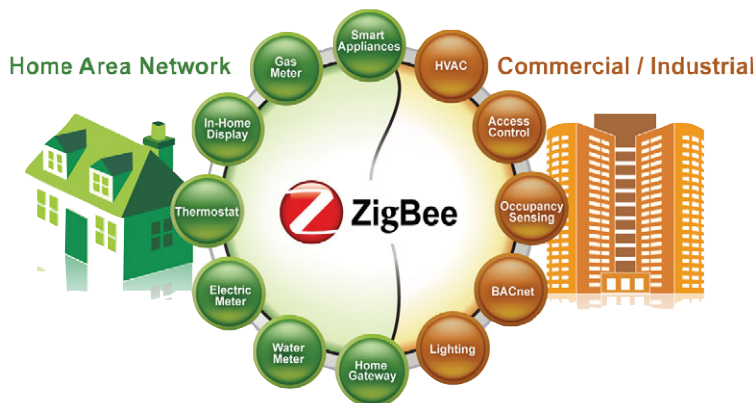
Tech Watch

ZigBee

by Andrew Leibman

IF WIRELESS PROTOCOLS were mosquitoes, then everywhere between the airport, your home office, and the coffee shop down the street would feel like July in Minnesota. Short range, long range, high bandwidth, low bandwidth, standardized, proprietary, and everything in between; it's hard to imagine that

Energy application profile include smart thermostats (capable of monitoring, controlling, and displaying energy consumption and rate data); smart meters (gas and energy consumption meters that let users track and manage consumption); and smart energy outlets, which can add Smart Energy communication features to almost any device.



the air above our heads can accommodate another major wireless protocol. But ZigBee isn't just another Wi-Fi wannabe, Bluetooth bandwagoner, or NFC facsimile; it's a standards-based wireless protocol that is ideally suited to the low-cost and low-power demands of remote monitoring and control applications, building and home automation, security, and much more. And the latest application profile update, ZigBee Smart Energy 2.0, is set to bring wireless data transmission capabilities to almost every device and appliance in your home.

The Brains Behind Smart Grid

The ZigBee Alliance, which counts Black & Decker, Cisco, General Electric, Intel, LG, Marvell, Pioneer, Samsung, Sony, Texas Instruments, and Whirlpool among its promoters, recently released the ZigBee Smart Energy 2.0 Technical Resource Document and opened the specification to public comments. The move is designed to encourage consumer electronics manufacturers, software developers, and others in the industry to help shape the eventual outcome of an IP-based protocol that will make the most of ZigBee-enabled Smart Grid products and services. Examples of products that rely on the current and future ZigBee Smart

Smart Parts

A typical ZigBee network consists of a single ZigBee coordinator, which handles the main network bridging duties and stores network configuration data and security keys; a ZigBee Router, which passes along data from other devices; and one or more ZigBee End Devices, which offer extremely specialized but limited functionality that enables them to communicate with the coordinator or router. A single ZigBee network can support a nearly unlimited number of devices simultaneously. The ZigBee protocol supports more than 64,000 nodes in a single network, but users can join several network coordinators together to support a vast number of clients.

In North and South America, ZigBee utilizes unlicensed bands in the 915MHz range and supports speeds of 40Kbps. Global devices operate at 2.4GHz, and those designed specifically for Europe run on the 868MHz band with speeds varying from 250Kbps to 20Kbps, respectively. The range varies by application power but can be as short as 10 meters and as long as 100 meters. ZigBee differs from other low-power wireless protocols in that it is designed to run on battery power for months, years, or up to a decade or longer, at which point the shelf life of the battery becomes the major limiting factor. The key to ZigBee's longevity is its ability to sleep for extended periods and only wake at set intervals or when data transmission becomes necessary.

The Home Of The Future

ZigBee Smart Energy 2.0 is currently in draft form, but the ZigBee Alliance was collecting public comments on the TRD as we went to press. The group expects more than 100 million ZigBee chips to ship in 2010 alone, but the jury's still out on whether the technology will catch on with consumers and businesses at large. ▲

FIVE REASONS TO WATCH ZIGBEE

- ▲ Extremely low-power technology that supports long battery life
- ▲ Maximum 100-meter range for large networks
- ▲ Supports nearly unlimited ZigBee end devices
- ▲ Ideal for home automation and smart appliances
- ▲ Low-cost radios and components make it inexpensive for manufacturers to add ZigBee to devices

NEC Fault Tolerant Servers

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With the adoption of virtualization rapidly growing, the need for ultra-high availability in virtualized environments is becoming critical. Introducing NEC's next generation Fault Tolerant (FT) servers – NEC Express5800 FT Server Series – with support for VMware vSphere™.

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Keys To Improving Customer Loyalty

Accenture's Research Shows
Not All Customer Service Investments Are Effective

by Rod Scher

In a challenging economic climate, companies are scrambling to find and retain business, and good customer service is one key to generating both sales and customer loyalty. A recent Accenture report, "Lessons from the Recession: Where Customer Service and Support Investments Yield Superior Returns for Communications and High-Tech Companies," points to misguided customer service investments as a cause of customer dissatisfaction. We spoke with Joseph P. Hughes, a senior executive

phone for 15 minutes, if you solve their problem. If at the end of 15 minutes your issue is solved, you're happy. You don't really care that it took 15 minutes, the bottom line is that you don't have to call back and you didn't get forwarded around.

What we're suggesting is to focus more on spending that is more impactful to the customer: first-call resolution or social media, for example, which are much more visible. Field service, by which I mean dispatch, is also very visible. If you buy something online, that delivery person may be your only in-person touch-point. A number of companies "black box" third-party dispatch, and that has an impact on customer service perception.

Some companies get it, in terms of field service, like DirecTV and Havertys Furniture. Havertys in particular: You can go to a Web site and tell where the technician is and if he's going to arrive at your house on time. They come in uniform, they're professionally dressed, they hand you a survey when they walk out the door. And they give you a two-hour window, instead of a four-hour or a day-long window. That's what customers feel. If you shift more to online, give them an online ability to order, that may help some with convenience, but if you blow it on the delivery, it doesn't matter if you gave them an easy time ordering it. And keep in mind that 70% of repeat buying behavior is due to the service you got after the sale.



"...investment in social media is 'table stakes' now; it's what people expect"

Joseph P. Hughes is a senior executive in Accenture's Electronics & High Tech Industry Group. He currently heads Accenture's efforts in voice of the customer analysis and the service applications of social CRM.

in Accenture's Electronics & High Tech Industry Group, about customer service needs as they relate to CHT (communications and high-tech) industries.

Businesses say they've made improvements in service, but the Accenture report notes that customers themselves disagree and say they've noticed little or no difference. So is this a perceptual problem or a true service issue?

What we're seeing is that some of the spending on service has been to save costs. Redoing a system to facilitate going offshore is a service expenditure, but it's not necessarily viewed as an improvement by the customer. Some of the money spent on service has been focused on shortening call length, but the reality is that customers will stay on the

One of your major recommendations is that businesses do a better job of "communicating" with their customers. What are they supposed to communicate about? And via what mechanisms?

It's not so much what should they say, it's really how and where they're communicating, and how often. Are they on the customer's channels: Twitter, Facebook, or customer forums? Their own forums and third-party forums are an absolutely critical communication medium that has been overlooked by a lot of companies. A lot of companies started a forum, saying, "Oh, this is great!

Other users are going to solve my questions for me.” And some of that’s true, but that doesn’t mean that you abdicate your support. DirecTV, for example, not only monitors their own forums, they also monitor third-party forums.

Our view is that an investment in social media is “table stakes” now; it’s what people expect. That’s the way they want to communicate. If 1/3 of your customer base doesn’t want to use the phone any more, are you going to not talk to them?! That’s the cultural shift that’s gone on here, whether we like it or not; this type of user-generated content as a way that people communicate is not going away. And it’s important for business-to-business customers. A data center person with a switch problem doesn’t want to get on the phone, either. It doesn’t matter that they have Platinum support from you, they still don’t want to get on the phone. They’d rather go up on the Web and figure out the answer.

The Accenture report talks about churn rates, noting that “53% of vendors said that their churn rate increased.” What does churn cost?

The traditional metric used by a number of companies is “cost of acquisition.” What did it cost them to get that customer? It’s supposed to be the sum of all the advertising and whatever else they did, discounting or whatever, to get that person. That cost of acquisition has a period of amortization, and if you don’t hold them that long, you’ve lost money, even though you had the customer.

The report notes that “most companies are not using advanced analytical tools to determine which cost changes would generate the greatest ROI,” and that therefore, companies may be making ill-informed decisions about where to invest or reduce costs. What sorts of analytical tools should they be using?

We’re talking about real-time analytics. Too much is done via data warehouse monthly reports. Technologies exist to do this much faster and in real time, and you need to. If some topic is spiking on Twitter, that’s something you need to react to in a day—the same day. We’re suggesting switching to more real-time analytics. All the traditional vendors have those options, but a lot of companies haven’t implemented them. They sort of stuck in the ETL—extract-transform-load—mentality on a much less-frequent basis. What we’re saying is that they need to increase the frequency, and all the analytics vendors offer those options now.

The report notes that the “relationship between CHT vendors and their customers . . . appears

tenuous.” What does that say about how CHT companies are conducting their businesses?

That’s what’s reinforcing one of the bottom lines in the study: How is the relationship conducted? It’s conducted now over social media, it’s conducted via your delivery-person; it clearly reinforces that that relationship is not being managed on the new channels on which it needs to be managed. That’s what we suggest.

In a nutshell, what should CHT businesses be doing to encourage/increase customer loyalty?

Communication with the customer is key. You get an email from the hotel saying, “Go to the Web site and register, and after three stays you get a free weekend.” They’ve already got a loyalty points program, but they’re still communicating with you. They could just give you the option, but they make you go to their Web site and register for it. Why? They’re using that opportunity to make an easy touch-point; there’s something else on the Web site that they want you to see.

You need to have an enhanced relationship with the customer, who now has more data than ever before—basically, you’ve lost control of a lot of your brand marketing. If you’re leaving one-star Amazon reviews unresponded to, you’re in trouble. You’ve got to respond with a fix or with fact-based counter-reviews that don’t sound like marketing drivel.

There’s a free AT&T iPhone application called Mark The Spot: If you experience a problem, fire up this app and they’ll use the data from your iPhone to try and address the issue. It pulls up a little window and it shows you the current location and you click “Dropped Call,” “Failed Call Attempt,” “Data Too Slow,” etc. Of course, if you can’t connect at all, then the app can’t connect either! But at least they’re trying. And the communication takes place in a format that’s easy for the customer; it’s not, “Will you respond to this phone survey?” It’s two clicks on the iPhone you’re already using.

This is the sort of thing people need to do more of. I come back to the simple things, like field service tracking—knowing where your technician is, knowing that he’s on his way, but without having to make a phone call. It’s little things like “flexible rescheduling.” This is the notion that, if you’re going to be late and you call up and say, “Hey, I’m gonna be late,” they tell you, “Sorry, we’ll have to reschedule you completely; when are you available next week?” There’s no reason to do that anymore. Technologies exist from multiple vendors that can do real-time rescheduling. That one is totally a business process. The old model of “call and wait,” that has to evolve. ▲

Green Lighting From GE

LEDs Evolve Into Cost-Effective, Green Tech Tools

by Rod Scher



GE's new 9-watt LED bulbs last twice as long as typical fluorescent bulbs and about 25 times as long as standard incandescent bulbs.

As a good citizen and a smart businessperson, you have a responsibility to pursue green technology whenever possible. After all, you want your company to improve the environment if it can; failing that, you certainly want to do as little harm as possible.

But let's be honest: There are also dollars involved here. While green technologies may require more of an initial investment, they often result in long-term savings. So, given your fiduciary responsibility to see that the company invests its money wisely, you look at green tech as a potential way to reduce long-term costs.

One of those costs is lighting, and there are new eco-friendly lighting technologies available that can save you money even as you help the environment. One example is GE's new Energy Smart LED light bulb.

Light Done Right

How can a simple light bulb save dollars? Well, GE's new 9-watt LED bulb generates as much light as a 40-watt incandescent bulb and has a rated life of some 25,000 hours. This means that the new bulbs last twice as long as a typical fluorescent bulb, about three times as long as a CFL (compact fluorescent), and about 25 times as long as a standard incandescent bulb. Imagine purchasing 1/25 the number of light bulbs you're currently buying. The savings—both in bulbs and in manpower—multiply quickly.

A Dual Savings

There's also a hidden savings here. The new LED bulbs use less electricity to begin with, which has a direct bearing on your monthly energy bills. Secondly, they produce much less heat than incandescent bulbs, which means that your A/C units don't have to work as hard to cool down workspaces; that impacts your HVAC costs, which often represent the largest portion of your energy bill.

LED Advantages

GE scientists really know LED technology: One of them, Nick Holonyak, invented the first commercially viable LED back in 1962, and GE scientists are still in the forefront of LED research. (In a 1963 Reader's Digest interview, Dr. Holonyak predicted that LED lighting would eventually replace incandescents. Almost 50 years later, that may finally be occurring.) That research produced the new bulb by overcoming two key obstacles: First, the company managed to design a bulb that delivers uniform light, despite the fact that LEDs are inherently directional; other LED "snow cone" bulbs mainly directed light toward the top of a lamp, but the Energy Smart bulb radiates light evenly. GE lighting physicist and principal engineer Gary Allen notes, "We wanted our new LED bulb to provide a light distribution, light quality, and aesthetic appearance as close as possible to our popular GE Soft White incandescent light bulb. The idea was to deliver what customers love—soft white light—in an LED bulb that deals with the directionality challenge that's typical with LEDs."

Second, the company avoided heat buildup in the bulb by integrating fins into the bulb to help dissipate that heat. "We designed and tested several variations of the snow cone approach, but none provided the incandescent-like all-around light that Energy Star requires without overheating the LEDs," says GE's Steve Briggs, VP of marketing and product management for GE Lighting. "Our fins envelop the glass bulb in a way that preserves a uniform distribution of light while keeping the LEDs cool."

And one additional benefit: The new bulbs are instant-on. While CFLs need to "warm up," the Energy Smart bulb delivers full brightness the instant it's turned on. ▲

GO GREEN, SAVE GREEN

GE's new bulb is an example of how research-driven corporations are helping to invent a greener future by allowing you to consider the environment when you make business decisions. Doing so can help your planet as it profits your company, and that's a win-win.

GE
Lighting



Comparing LEDs? This will shed some light on reliability.

Quality light. And lasting quality. That's what you look for in LED lighting. GE LED systems set the standard for quality and reliability. Our integrated inspection process ensures that every LED product meets exact standards. Plus, extreme testing documents quality, long life and lasting intensity. That's why our installed base includes more than 25 million feet of LED linear lighting, with a warranty return rate of less than 0.05%. For LED quality and reliability, insist on GE. When you take time to make sure you're not comparing apples to oranges, you'll quickly see that GE LED systems provide the excellent quality and reliability that you deserve.

Compare before you choose LED systems; visit www.gelighting.com/apples-to-oranges.



imagination at work

KEY POINTS

▲ Computing is increasingly centralized in data centers

▲ Because of the data center's huge size, efficiency in every area is key to reducing waste and increasing ROI

▲ Creative data center construction and hardware selection can significantly reduce energy use

▲ Cutting energy costs, even factoring in the added expense of things such as virtualization, saves money in the long run

A New Kind Of Cool

Data Centers Take Note

by Seth Colaner

As organizations continue to centralize computer resources, data centers are increasingly important. More businesses and consumers are outsourcing data storage, software, and services, and all those resources are reallocated to data centers. Because of the enormous scale of these facilities, the efficiency of every aspect of the data center comes into sharp focus.

The most scrutinized areas of the data center? According to Chuck Powers, who works for the NREL's (National Renewable Energy Laboratory; www.nrel.gov) Information Services, "There are really three attributes that you're trying to manage in a data center: It's the cooling, it's the power, and it's the space."

Less Is More

Some people may think it is counter-intuitive that simplifying the approach to cooling could possibly work, but the various techniques make sense. The main idea behind alternate means of cooling and heating data centers is that you should carefully select your location and utilize the elements.

The NREL (National Renewable Energy Laboratory) built a 220,000-square-foot office/data center that relied on green ideas for power and cooling.

For example, NREL has a new building in Colorado, and the company takes advantage of the cool mountain air. Large intake fans suck air into the building and run it through a maze of underground concrete, which cools the air further. Next, the air is pumped into the data center to cool the facility. This system all but replaces traditional

air conditioning with its power-hungry compressors.

"We're going to be able to use a technique called 'free cooling' 99.5% of the year," Powers says. "For 33.5 hours out of the year, we're going to have to supplement the cooling using traditional chilled water, which is air-conditioned cooling." Otherwise, NREL can get by on the free cooling method, which Powers says has significantly reduced the company's power consumption requirements.

In very dry climates, data centers can use evaporative cooling. Dry air is pulled across moist surfaces in the facility, which cools the air. Then, fans or blowers circulate the chilled air throughout the building. Devices that do this are often called "swamp coolers." The drier the climate, the more effective evaporative cooling is because humid air doesn't pick up as much moisture and, therefore, isn't cooled as dramatically.

Other cooling techniques in use include harnessing wind power in certain geographic areas, strategically placed foliage to block the summer sun but let

in the winter sun, and using construction materials that lend themselves to the goal of heating or cooling (such as NREL's concrete maze).

ROI

Let's be honest, going green may help you sleep better at night, and it undeniably helps the environment, but at the end of the day, you run a

business, and that business must be profitable. You need to be able to project financial results in order to implement any changes.

Perhaps spending millions constructing a new "state-of-the-green" data center isn't exactly in the budget at the moment; there are other ways to save on energy costs.

One technique that Powers has used in the past was to cycle in more efficient blades to replace aging servers; this was simply a normal part of the life cycle of servers, which only last a few years. Then, he used virtualization to reduce the number of physical servers needed, which further reduced the energy required to run the data center.

He noted that NREL did incur expenses from licensing fees from VMware, which is virtualization software that helps to reduce hardware requirements, but he also pointed out that data centers facilitate other opportunities to cut waste. Telecommuting, for example, lets employees collaborate in a meaningful way on projects without having to drive, fly, or stay in hotels.

The NREL data center is also arranged into hot and cold aisles (which is a standard IT practice), but IT personnel there are taking the idea a step further. They put doors and lids on the hot aisles to isolate the hot air from the cold, thus ensuring that the cool air is used efficiently and the hot air is used to heat the building when needed.

There are numerous smart solutions for cutting energy waste in the data center and thereby saving money. Thinking green can be environmentally and fiscally responsible. ▲

Most digital copiers since 2002 contain a hard drive that stores an image of each document it handles, including bank records, tax data, SSNs, paychecks, bills, and medical records.

DAMAGE

The Harm That Hackers Can Do

by Blaine Flamig

KEY POINTS

▲ Companies must guard against both external and internal security threats, including ex-employees maintaining network access.

▲ Attacks can devastate companies financially but also erode customer trust and impair IT's regular daily duties.

▲ Survey results suggest most companies do a poor job of performing paper/electronic document audits for existing employees.

▲ Such seemingly harmless equipment as a digital copier can lead to a significant loss in company data.

Here's a fact: A hacker fueled on bad intentions can devastate a company by stealing its data, marring its reputation, forcing IT to devote all attention to plugging the breach, and potentially incurring the company fines and penalties if it's found culpable of not properly securing customer data. Here's another fact: Many companies aid hackers by falsely believing that because they've put security measures in place, they're immune to future attacks. Evidence suggests otherwise, as we'll detail.

Overconfident & Unaware

Guarding against external hacker threats is imperative, but so is looking inward. In a survey Courion conducted in May 2009 of 236 business managers, including 50% from enterprises with 10,000-plus workers, 93% believed ex-employees didn't pose a security threat despite IT managers possessing "limited or no knowledge" of which computers current and ex-employees had access to. Further, 30% stated their companies handled user accounts manually, meaning an increased likelihood of human error and delays in de-provisioning ex-employees. In fact, 48% reported it took one business day or longer to alert IT of terminated employees, 34% reported a week or longer to accomplish that task, and 9% reported never being completely certain access ended. A recent Deloitte survey of senior security officers, meanwhile,

found nearly 60% cited worries about their company's prowess to protect against internal attacks.

Real-world examples include New Yorker Jason Wang, an ex-computer support employee with North General Hospital in Harlem. After being fired in September 2009, Wang allegedly hacked the hospital's network days later accessing patient data and using a physician's password and ID to send internal email. In October 2009, ex-AOL computer software engineer Gregory Tomlinson allegedly stole AOL proprietary computer codes and made unauthorized changes to AOL's Web site after submitting his two-week resignation.

A 2009 Symantec and Ponemon Institute survey, meanwhile, found that the occurrence of ex-employees taking company data is fairly common. Of 945 U.S. workers surveyed who lost or changed jobs in 2008, 59% admitted taking confidential data without permission, including email lists (65%), non-financial data (45%), and customer data (39%) via CD/DVDs (53%), USB drives (42%), and email attachments (38%). Further, 24% maintained network access after leaving, including 35% for a week or longer. Further, 82% underwent no audit or paper/electronic document review before leaving, and 29% who did depicted the process as superficial.

A Company's Good Name

Of course, companies are also targeted by many varieties of external attacks. Noteworthy

DONE

examples include the 2007 TJX Companies breach that resulted in roughly 95 million credit card records being swiped and at least \$200 million in losses. Albert Gonzalez was convicted for his part in that case and was involved in the 2008 Heartland Payment Systems breach that saw roughly 130 million credit card records taken, believed to be the largest such loss in U.S. history. In the aftermath, Heartland's stock plummeted nearly 80%, and it has since paid millions in settlements. More recently, Google, Intel, Symantec, and Northrop Grumman have all reportedly begun including investor warnings in U.S. SEC filings of computer-related attacks after each company was recently targeted with attacks.

Even when companies aren't targeted directly, they can feel a hacker's backlash. For example, in its "January 2010 Spam Report," McAfee noted global spam levels shot up Dec. 14, 2009, due to pharmaceutical-related spam emitting from China containing the Pfizer brand name. Beyond

bogging down spam filters and causing end users' misguided annoyance with Pfizer, such attacks hinder employee productivity and inundate system administrators with spam-related complaints. They also keep IT from such other regular duties as securing the company's mobile devices; safeguarding against employee use of social networks; overseeing the security of third-party cloud computing services, infrastructure, and applications the company uses; and securing against weak employee-generated passwords.

Take, for example, a recent report from Imperva concerning 32 million passwords a hacker stole (and later posted online) from mobile app seller Rock You (www.rockyou.com) using an SQL injection vulnerability. Imperva found the most popular password Rock You users generated and logged in with was the especially weak "123456." Worse, Imperva estimated many users use the same or similar password for all login sites. Thus, it figures such weak passwords carry over into the workplace.

Where You Least Suspect It

Even a company seemingly doing everything possible security-wise can trip over its own feet via something as seemingly innocent as the company printer. A recent CBS News investigation, for example, reported that most digital copiers since 2002 contain a hard drive that stores an image of each document it handles, including bank records, tax data, SSNs, paychecks, bills, and medical records. With an expert's assistance, CBS used free software to obtain images of thousands of documents in a half day's time from used copiers it purchased for about \$300 each. Separately, TechRepublic found 54% of 1,102 members stated their companies had no policy for wiping copier hard drives, and 68% of 799 members stated their companies didn't wipe data on copier drives. ▲

130 MILLION

▲ The number of credit cards for which data was stolen from Heartland Payment Systems in 2008, believed to be the largest such loss in U.S. history.

80%

▲ The extent to which Heartland's stocks fell after the data breach was disclosed.



93% of business managers don't think ex-employees pose a security risk.



59% of ex-employees admitted taking confidential data before they left.

Thinking Business? Think Best Buy®

How The Retailer Is Focusing On Customer Solutions



Elite Travel Assistants owner Jean Skupien relies on the expertise and product availability at Best Buy. "They work together to get me exactly what I need," Jean says.

As a business owner, where do you go for advice when you're considering upgrading your wireless network, buying a new notebook or server, or making other technology decisions? Despite having numerous options, what many businesspeople feel they lack is a consistent, readily available source of business-appropriate advice, fast and reliable technical support, and the products they need when they need them. Best Buy (BestBuy.com/business) recognizes the problem and seeks to solve it not only with in-store assistance and 24/7/365 online availability, but also with specialized service and expertise geared specifically to business customers.

Listening To Customers

The Best Buy reputation as the go-to retailer for consumer electronics is well-established; and for decades many of its consumer electronics customers have also turned to Best Buy for their business needs, purchasing everything from computers and software to waiting-area TV sets and office refrigerators. But for some, Best Buy isn't the store that initially comes to mind for business technology.

So what's a retailer the size and scope of Best Buy to do when it comes to drawing in more customers for its business technology products and services? For starters, it does what it has been doing for years: listen.

Many Best Buy business customers have had stories to tell, and Best Buy specialists have listened and learned. As a company, Best Buy has listened, too, and decided it wants to hear more of those stories and share some of them with others, building on an open dialogue that will benefit both the company and its customers. "It's about sharing information and asking the right questions," says Grant Bernhagen, a Best Buy product manager. "We learn about our customers and are able to provide customized solutions."

Building On Customer Stories

One company that has relied on Best Buy for mobile and office technology to improve productivity and efficiency is Split Rock Communications (www.splitrockpr.com). "We have a virtual model," says owner Jeff Scott. "I work out of my home and I have several people around the San Francisco Bay



Split Rock Communications owner Jeff Scott took his company wireless with products and assistance from Best Buy.

Area who work from their homes." Best Buy helps Jeff stay current with the latest technologies and products that are the most beneficial to his business. Jeff uses a smartphone, a wireless laptop, a wireless printer/scanner/fax, a camcorder for meetings, and a GPS device for worry-free navigation. He says wireless technology helps him enjoy what he does and improves his work/life balance.

Jean Skupien, owner of Elite Travel Assistants (www.elitetravelassistants.com), is another businessperson whom Best Buy has helped. Jean's company provides personal assistance to executives and others who need to focus on their business rather than the minutiae of travel-related planning. Jean says, "With Best Buy, you walk in and they ask, 'What do you need and what brand are you interested in?' Then they research it for me. They find it. When I go back a day or two later, they have it in the store. I can try it out. They accommodate me and they listen."

These are the kinds of stories Best Buy shares internally every day with an eye toward improving sales and service. Now, to help bring some of those stories to other customers, the company has published "Business Solutions Technology Guide: True Stories, True Solutions," available in stores (starting July 11) and online (bbfb.com/truesolutions). In the guide you'll find out more about Jeff, Jean and other customers, and ideas for keeping you connected, protecting and promoting your business and more.

Service For Businesses

In addition to connecting with customers through the guide, Best Buy now has specialists trained to help business customers in every store and is developing an online business community that will continue to expand the dialogue among customers and specialists. To find out what Best Buy can do for your business, call 1-800-373-3050, visit your local store, or go to bbfb.com/truesolutions. To find a Best Buy near you, visit BestBuy.com/storelocator. ▲

Bringing the arts to my community is my passion. Managing the technology around it was my problem.

HAPPY@WORK

IT STARTED WITH A SIMPLE IDEA: HELP BUILD THE SAVAGE, MINNESOTA ARTS COMMUNITY FROM SCRATCH.

Jo Storey has been drawn to the arts since childhood. After years of the corporate grind, she felt the arts pulling her back. With a shift in her life's priorities and a classic art education under her belt, she was brimming with passion. Giving local artists much-needed space to create and show art was her mission. She had the art stuff down pat, but what about the technology needed to pull it off?

IT WAS SOON CLEAR THAT A MODERN BUSINESS CAN'T RUN ON A CLASSIC COMPUTER SYSTEM.

Handwritten receipts. Outdated computers. A system that stole time away from the fun stuff. After a trip to Best Buy®, a healthy shot of new technology helped her focus on what's important to her. A sales associate named Chris recommended a computer right for her situation and then asked: "How do you manage all these artists?" A moment later they were discussing point-of-sale and inventory software and planning a studio visit from Tony, a Geek Squad® Agent, to get it going flawlessly.



FROM A SIMPLE VISION TO A COMMUNITY ARTS LEADER.

With help from Best Buy, Jo's new computer system and software keep her studio running smoothly, giving her back eight extra hours per week to nurture local artists for the national stage. And she's never been happier.



Ask us how we can help your business at a Best Buy store or by calling 1-800-373-3050. How has technology made your small business successful? Upload your story at bestbuyforbusinesstruestories.com



Buyer be happy.™

Jo Storey
Director/Owner
Savage Art Studios & Gallery
Savage, MN

Saving Dollars

By Making Sense

Cloud Computing Advice For SMBs

by Seth Colaner

The most general description of the functionality of cloud computing is that it takes something that is local—software installed on office computers, servers in a company's server room, and so on—and moves it or outsources it to another company or location.

And although it's easy to get bogged down by trying to pin down a definition of "the cloud" because of the variety of services cloud computing accommodates, the reality is that "the cloud" itself is really just a way of describing the Internet. Enterprising entities find ways to leverage the capabilities of the Internet to deliver valuable products and services—hence, cloud computing.

Cloud products, tools, and services run a wide gamut of types and functionalities and include storage, backup and recovery, email, project management, office productivity, and more.

What Can The Cloud Do For SMBs?

Chances are, if you run an SMB, you probably already use a lot of cloud services without even realizing it. For example, do you use Web-based email in the office? What about an online backup or syncing tool, Google Docs, or a Web host for your company site? Those are all cloud services, and if you extrapolate the pros and cons of using those products to other facets of your company, you can

begin to form a picture in your mind as to what cloud computing can offer you.

In general, cloud computing can help you cut down on hardware and software costs, infrastructure costs, and human resources expenses while enhancing efficiency and flexibility, if you use it right.

A common use for cloud computing among SMBs is data backup and disaster recovery. Even if you prefer to keep all of your IT infrastructure and management in house, it's important to have a backup of all your data and even applications. Instead of building a second branch just for redundancy, for many SMBs, it's more cost- and time-efficient to contract with a cloud provider for this service.

There are plenty of other uses for cloud products and services, as well. For some SMBs, it might be online collaboration tools. For others, perhaps it's server virtualization or using internally based cloud technology to create a private cloud for the company. And there are plenty of cloud tools to meet virtually any other software or service need you require, too.

Cloud computing can also let you leverage expertise that your company otherwise doesn't have, such as with IT resources. If you don't know how to do something critical to your business, you can probably contract with a cloud service to do it for you.

Using a cloud service can help you focus on your core business, too. For example, if you make widgets, you want to keep yourself and your staff focused on good design, maintaining production levels, quality control, distribution, marketing, and so on. But some necessary parts of running a business aren't germane to your primary reason for being, such as human resources and IT services. If you have the capital, you can use cloud service providers to handle those tasks for you. Doing so will reduce the number of additional employees you need, the amount of hardware and software you need to purchase, and even reduce the square footage of office space you need.

The Cloud In Varying Degrees

Moving to the cloud doesn't have to be an all-or-nothing venture. You can outsource your IT requirements, enlist a storage service for backup and disaster recovery, or simply subscribe to some SaaS (software as a service) application.

In fact, cloud adoption really only works if you use it to fill specific needs. For example, although online collaboration tools can be powerful (and frankly, really cool), you may not need them; conversely, for a different SMB, enabling your cadre of remote workers to collaborate in real time on major projects could be the lifeblood of your business. In the first case, it's an extravagance that wastes

money, and in the second, it's a necessity that could save the company enormous costs incurred for travel and inefficiently used employee man hours.

The same logic applies to all facets of cloud computing. If an SMB is poised for growth, for example, moving your IT management to a cloud company that has the resources and expertise to scale rapidly can pave the way for your company's success without being hampered by the costs of additional hardware, additional personnel, and any associated growing pains. If your IT needs are instead very minimal, you can hand those tasks to someone in house and look to use your cloud dollars to fill a different need.

The main thing to keep in mind as you consider your cloud strategy is that no matter what, things are going to cost you some money, whether you outsource a need to a cloud provider or hire your own people to do it. The benefits from cloud computing come when you find a cloud solution that is more efficient, costs less, offers better expertise, and contributes to the overall success of your business better than a resource from within your company.

Security & Common Sense

Although it's cited so often as a barrier to cloud adoption that it's almost just a drone by now, security in the cloud is hugely important. Remember that with cloud computing, you're giving your sensitive data and trusting your mission-critical services to a third party; you're relying on them to not only provide great services, but to protect your business' interests.

Before you sign an SLA (service-level agreement), read the fine print to make sure you have the level of ownership, flexibility, and terms you require. Make sure the service is a reputable one, although that's just common sense. (You wouldn't sign, for example, a distribution contract with a trucking company without checking and re-checking their credibility, would you?)

As far as your own internal use of a cloud service goes, take simple precautions such as using strong passwords and making sure you can track and remotely brick company-owned mobile devices. Doing so will help protect against self-inflicted data breaches (read: usernames and passwords for your cloud services) in the event of lost or stolen company devices.

Cloud computing offers any number of possibilities SMBs can leverage to get ahead, but don't make the mistake of thinking of any and every tantalizing cloud service or product as a silver bullet to success and savings. To make cloud computing work for you, you need to determine what your needs are and find cloud solutions to fit. ▲



If you use a Web-based email service such as Gmail (mail.google.com) in the office, you're already using cloud computing.



A rich collaboration tool such as HyperOffice (www.hyperoffice.com) allows your employees to collaborate on projects in real time from almost anywhere.



Although equipped with other products and services, Salesforce.com is a popular CRM tool.



Rackspace (www.rackspace.com) offers a variety of managed, cloud, and email hosting services.

Are Your Computers Slowing Down?

What To Do About It

by Marty Sems

The question is hardly worth asking. It's almost a certainty that your office PCs lack that vim, vigor, and va-va-voom that they once had. Rare—nay, mythical—is the employee who tells you, “Man, my computer just keeps getting faster and faster.”

Notebooks and desktops slow down over time for a number of reasons. The limitations of storage hardware are to blame, but so is software. Operating systems and major applications grow in size and demand for system resources, as do security suites, which have to combat more malware than ever before. And few programs actually need to keep processes running in the background at all times (absorbing RAM and CPU cycles), but many put such processes in Windows' startup list.

The way your employees use their work computers has an impact, too. Most employees have a few essential applications running at all times, such as a CRM solution and an email client, in addition to the application(s) they're currently using.

As for buying new PCs, we'll assume that your company is “between refreshes.” Faster systems can help alleviate many of the performance problems your people currently face, especially if their computers have single-core CPUs and 1GB or less of RAM. Of course, if there isn't enough room in the budget for a wholesale PC upgrade, it's time to make the best of what you have.

Here are some high-yield steps you can take to restore lost performance—and productivity.

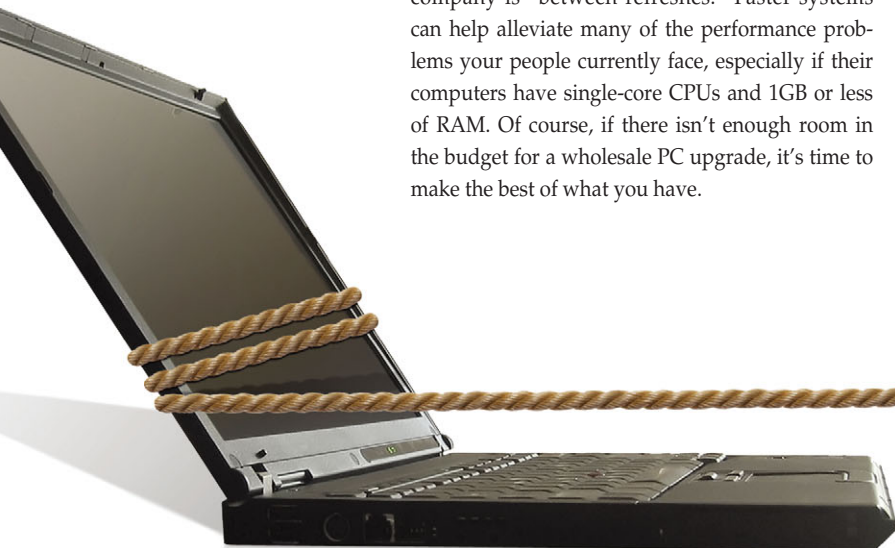
Maintenance

The vast majority of business PCs use traditional hard drives for file storage. Over time, the continual data writes and deletions of everyday PC usage start to take a toll on a drive's data transfer speed.

Notebooks and desktops slow down over time for a number of reasons.

As a hard drive's capacity fills with files, it stores new information on parts of the disks that are slower to write and read. Moreover, a very full drive will pose problems for the OS, which requires a certain amount of free drive space to run properly. Therefore, you should occasionally run a utility, such as Windows' Disk Cleanup or Piriform's CCleaner (www.piriform.com) to get rid of “junk” files. While you're at it, uninstall programs your workers no longer need.

Also, as free space dwindles into small chunks, a drive starts to store large files in fragments. This bogs down reads and writes, too. Use an automatic defragmentation utility to keep your computers sprightly.



Even SSDs (solid-state drives)—fast flash memory-based hard drive replacements that you shouldn't defragment—can gradually slow down over time. Many manufacturers provide "garbage collection" utilities that restore their SSDs' speed. Such utilities erase deleted blocks of data that would otherwise slow down future write operations. Note that if you run an SSD with TRIM support under Windows 7, you shouldn't experience drive slowdowns nor have to run a garbage collection app.

As for extraneous processes running in the background, the System Configuration Utility lets you disable items that launch when Windows starts. To find it, type **msconfig** in Windows' Run or Start Search field, press ENTER, and then click the Startup tab in the resulting dialog box.

Another thing to check is that each computer's drive is running in DMA (direct memory access) mode. In the Device Manager, look at the Properties of each drive controller's IDE channels; click the Advanced Settings tab. Also, verify that your office's wireless or Ethernet network speeds are up to par.

There's one remedy we generally don't endorse: Registry cleaning utilities. Although certain reputable cleaners may do some good, many don't justify their cost—and may even cause new problems.

RAM

More processing power can help overcome some types of PC slowdowns. That said, the majority of business computers aren't good candidates for CPU upgrades. Even assuming support from the motherboard, heat removal apparatus, and power supply, the returns often aren't worth the money and man-hours invested.

On the other hand, more memory can often relieve a bottleneck. RAM offers fast, temporary storage for data. It helps keep the existing processor "fed" instead of sitting idle, waiting for a relatively slow hard drive to send it data. A 3GB or 4GB complement of memory can really wake up a typical business PC. To fully utilize the latter, run 64-bit Windows Vista or Win7.

It's critical for business continuity that any RAM you buy be compatible with your PCs.

The computer or motherboard manufacturer is the best source for memory compatibility information, but some RAM vendors also provide supported hardware lists. If you need to vary from the certified RAM list, try to purchase memory that matches the existing RAM's clock frequency. Actually, you can use faster memory, but the motherboard will automatically run it at a supported speed. In certain cases, your IT department may need to adjust BIOS settings to accommodate certain DIMMs (dual in-line memory modules), which adds cost and time to the upgrade.

Storage

Because a plodding hard drive slows down so many things a PC can do, you might decide to approve the rather involved step of replacing your systems' drives with faster storage. You'll get the maximum increase in responsiveness by upgrading the boot drive (the hard drive with the OS on it), not simply adding a secondary or external storage unit. Be aware, though, that the process of cloning the old drive to the new and then swapping the physical units is labor-intensive.

Your next decision is whether to buy new hard drives or SSDs. The biggest advantage of a hard drive is its cheap capacity (about \$130 for a 2TB [roughly 2,000GB] desktop drive). Assuming that a new drive has the same or higher rotational speed as the old drive, such as 7,200rpm, it should yield a modest to moderate performance boost, too.

An SSD will provide a more radical speed bump. In many cases, this means faster boot times, application launches, and file transfers. On the other hand, SSDs come in smaller capacities than hard drives, and they cost several times as much. For the \$130 we mentioned previously, you'll currently get 64GB, tops.

Whichever type of drive you choose, it will need to use the same interface as your old drive(s), such as SATA. It will also need to be the same physical size, such as the 3.5-inch wide form factor for desktops, or smaller (2.5-inch drives fit in both desktop PCs and notebooks).

Time Is Money

The more time your employees spend waiting for their PCs to do something, the less money they're making for you. Our speed tweaks can not only jumpstart your computers, but perhaps your company's productivity, as well. ▲

SPEED TWEAKS

In order from minor to major, here are our recommended steps to put some verve back into your company's computers. Some can benefit performance more than others, but they're all important.

- ▲ Delete junk files
- ▲ Uninstall unnecessary applications
- ▲ Defragment hard drives or "garbage collection" for SSDs (as applicable)
- ▲ Purge Windows' startup list
- ▲ Verify drives are running in DMA (direct memory access) mode
- ▲ Check network speed
- ▲ Add RAM
- ▲ Replace drives with faster ones

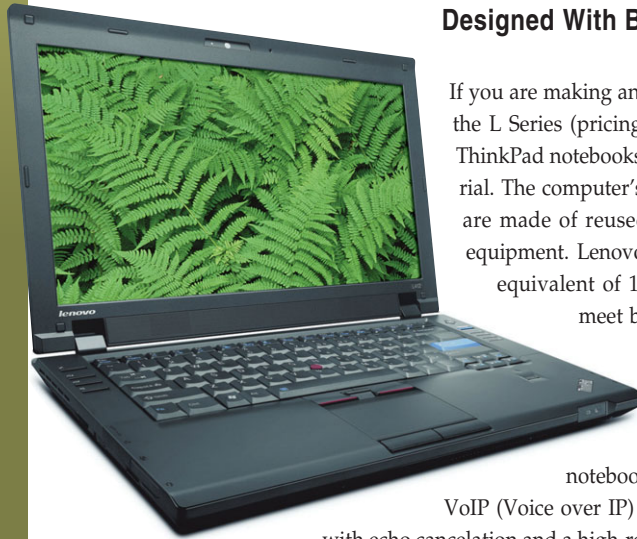


Greenovations

Energy-Conscious Tech

by Nathan Lake

The electronic devices that make our lives easier also produce some unwanted side-effects on the environment. Fortunately, many consumer electronics manufacturers are now making products that keep us productive and lessen our device's energy demands. In this article, we'll cover some of the newest environmentally friendly technology available.



Designed With Business & The Environment In Mind

If you are making an effort to do your part to save the environment, the L Series (pricing starts at \$649; www.lenovo.com) of Lenovo's ThinkPad notebooks are made with up to 18% post-consumer material. The computer's case, palm rests, and LCD cover, for instance, are made of reused plastics from office water jugs and used IT equipment. Lenovo claims that each L Series notebook keeps the equivalent of 10 plastic water bottles out of the landfills. To meet business needs, the ThinkPad L Series offers up to eight hours of battery life and an Intel processor that features Hyper-Threading and Turbo Boost technology, which can automatically increase the performance of the notebook when necessary. Workers that participate in VoIP (Voice over IP) conferences will enjoy the built-in microphone with echo cancelation and a high-resolution Web cam.

Aspen: Sony Ericsson's Green Innovation

The Aspen (price yet to be announced; www.sonyericsson.com) is a Windows Mobile smartphone that's part of Sony Ericsson's GreenHeart portfolio. The phone's exterior is made of recycled plastics, and its display is energy efficient. Sony Ericsson indicates that the design decreases the overall CO₂ emissions of the phone by 15%. It features a 2.4-inch touchscreen and a full QWERTY keyboard to maximize your efficiency when operating the phone and typing emails. For security, it integrates Microsoft's MyPhone service that can remotely erase phone data if the handset is stolen. You can connect via 3G or Wi-Fi, and the Aspen includes Bluetooth, A-GPS, and a 3.2MP camera. Sony Ericsson has not yet released specifics about U.S. availability.



No Smart Meter Necessary

Utility companies have been moving pretty slowly with smart meters, which indicate how much electricity your devices consume and let you turn off electronic devices. With Tenrehte Technologies PICOwatt (\$79; www.tenrehte.com), you can add smart meter functionality to whatever device you connect to the PICOwatt. It sends energy information via Wi-Fi to a PC or smartphone, and you can also remotely turn the device on or off or set a timer. Based on partnerships with utilities, the PICOwatt can help you use rate information to save you money by running utility intensive tasks, such as washing the dishes, when the rates are lower.



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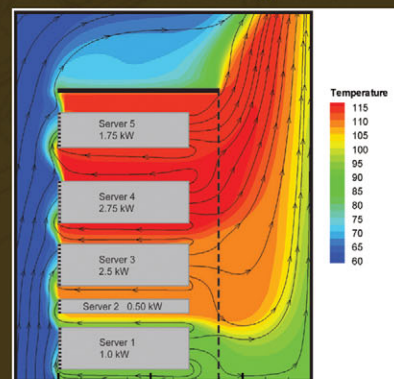
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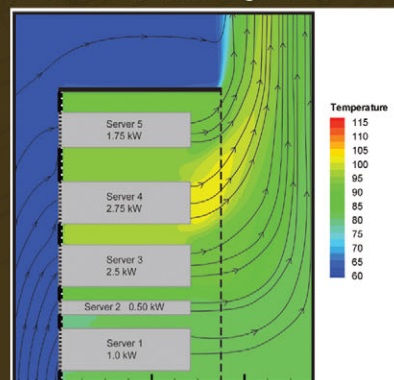
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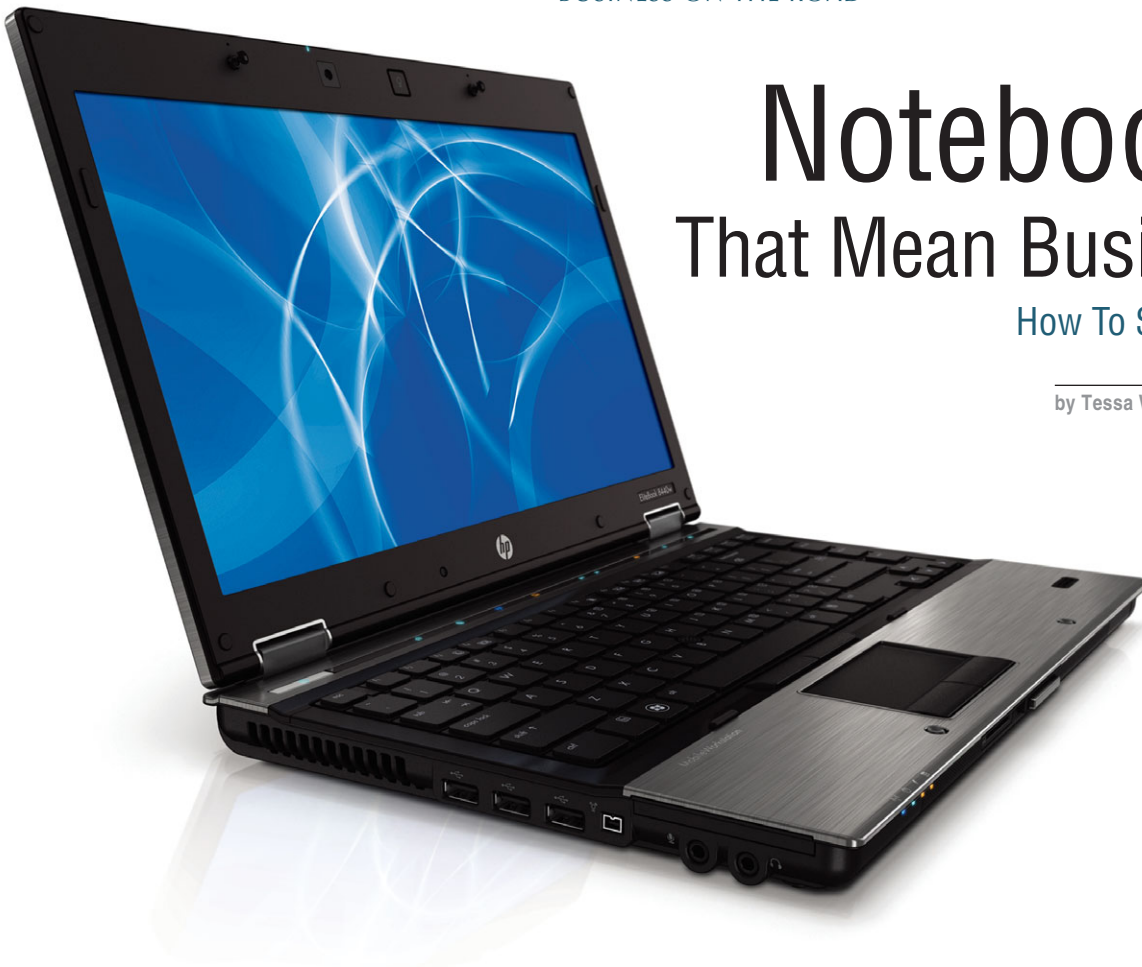


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Notebooks That Mean Business

How To Spot Them

by Tessa Warner Breneman

Selecting the right notebook for your company—whether you’re buying just one or a whole fleet—can be unnerving. You have to weigh the needs of your company and employees against your budget. At the same time, you must find something affordable that will last a long time and also maximize the return on your investment. It’s enough to make even the toughest business executives sweat.

A good place to start is to know what your employees are using their notebooks for. For example, if your sales and marketing department is in charge of creating all the content-rich marketing materials, they’ll need a powerful notebook that can keep up with memory-intensive projects and applications. But maybe your employees don’t ever open anything more than a simple spreadsheet or a customer management database program, so you only need to find something that can meet basic needs.

Whether you’re purchasing a notebook for one employee, one department, or an entire enterprise, you’ll have several manufacturers and hundreds of models and configurations to choose from. To make this complicated process seem more manageable, you can break down

your purchasing options by the features your employees need.

Security

Securing your corporate data should be your top priority when it comes to any type of mobile device. It will be far more expensive to pay for the consequences of a data breach than to buy a slightly more expensive notebook.

If your employees will be carrying around databases with personal information, such as Social



A fingerprint reader, such as the one shown on this Toshiba Tecra R10 (\$1,399 base price; www.toshiba.com) will ensure unauthorized users won’t gain access to data.

Security numbers, consider a notebook with a self-encrypting drive. These drives offer hardware-based encryption designed to thwart even the savviest computer hacker. Additionally, notebooks with built-in full-disk encryption, pre-boot passwords, and fingerprint readers will help keep unauthorized users from starting up a machine and getting into its data.

Anti-theft technology is also available to prevent a data breach if a drive is removed or replaced, or the operating system is reimaged. Plus, some notebooks are equipped with GPS chips that let you geographically track where the computer is (as long as it's powered on) so you can retrieve the device and the data stored on it.

Physical Properties

The best business notebooks will pack all the necessary features into a small, lightweight package. While it might be nice to have a beautiful 17-inch high-resolution screen for getting a good view of presentations and documents, don't forget you and your employees will have to haul it around while hurrying to catch flights, taxis, and trains. It will make everyone's life easier if the screen size is 14 inches or less and the overall weight is no more than 5 pounds.

With all the opportunities your employees have to drop or bang their notebook while on the road, it's also a good idea to get a notebook made from durable materials. A physically damaged notebook can cost your company more than just the price of the computer. If sensitive or critical data is lost due to a drive failure (and that data has yet to be backed up), you could end up paying thousands of dollars to recover data—if it's recoverable at all.

Notebooks with casing made out of strong plastics and other durable materials can help shield the fragile parts inside the computer. Additionally, some notebooks include anti-shock technology that detects when a computer has been dropped, and then locks the hard drive to prevent a catastrophic crash. When a notebook with a traditional hard drive is dropped, there's a big risk that the collision between the drive arm, spinning platters, and the ground will end in a data-loss disaster. Choosing a notebook with a flash-based SSD (solid-state drive) over an HDD (hard disk drive) with fragile moving parts could also help preserve your data in case the notebook takes a hit.

Storage

In addition to being more durable, SSDs are also lighter, more energy efficient, quieter, and generally faster with many tasks. However, a fleet of HDD-based notebooks could still be best for your

organization. Notebooks with traditional hard drives are less expensive than those with SSDs, and they excel at sequential operations, such as copying large files. Plus, a hard drive with a high rotational speed, such as 7,200rpm, won't make you sacrifice much in regards to speed. If you're looking for a high-capacity drive at an affordable price, you'll likely find your match with a traditional hard drive.

When it comes to making decisions about the optical drive, consider those employee needs that relate to the drive. If your employees only use their optical drive to download software from CDs, or write data to storage discs, a standard DVD rewritable drive will be sufficient. However, if your employees work with high-definition content, to either view or create videos, they will need a Blu-ray Disc drive.

Blu-ray capabilities are best supported through discrete graphics. This will provide a dedicated



graphics processor and the necessary memory for rich content, such as high-definition and 3D videos and images. If you aren't concerned with any of those technologies or media, integrated graphics should be adequate.

Power & Speed

Selecting a processor requires striking a balance between power and energy efficiency, which can be

- HDDs, such as the Western Digital 320GB Scorpio Blue (\$119.99; www.westerndigital.com) have fragile moving parts, while SSDs, including the Western Digital 256GB SiliconEdge Blue (\$999; www.westerndigital.com), do not.

MOBILE OFFICE BUSINESS ON THE ROAD

ENERGY EFFICIENCY

When you and your employees are on the road, it can be a real pain to find an outlet at every stop you make. Plus, an energy-efficient notebook will save your organization on energy costs when it's docked at your employees' desks. Here are some tips for ensuring a long battery life:

- The more cells your battery has, the longer it will last. So, opt for a 6- or 9-cell battery. This might add a little weight to the notebook, however.
- Remember to opt for an SSD over a traditional spinning hard drive, and find an energy-efficient processor.
- Find a notebook with advanced power management controls.
- Be sure your notebook is Energy Star-compliant.

a tricky task. Whichever processor you choose, it should be able to comfortably handle all the different types of applications your employees use. The more cores the processor has, the better the multitasking capabilities it offers. So, if your employees use design and content editing programs to create documents and presentations, a triple- or quad-core processor will provide the power and speed they need to get the job done quickly while in or out of the office. If your employees rely mainly on standard email, word processing, and spreadsheet applications, a dual-core processor will be plenty.

A processor with a clock speed around 2GHz should possess enough "brain" power for all the applications to run smoothly. If energy efficiency is your concern, note that processors with higher watts, faster clock speeds, and more cores will require more battery power. A processor under 35 watts will keep your battery going strong for a longer amount of time.

Another element that will help your employees multitask more efficiently is the notebook's RAM (random-access memory). More memory helps the computer access data quicker when multiple applications are running, so you can quickly switch between programs. With a powerful processor and at least 4GB of RAM, your employees won't have anything holding them back from hitting maximum productivity levels.

To use the largest amounts of RAM possible, you'll need a 64-bit operating system. These OSes are designed to handle large applications (such as graphic design, illustration, and video-editing software) and multitasking with ease. However, that doesn't mean a 32-bit operating system isn't up to a challenge; they will work fine for most applications. As a rule of thumb, you should consider a 64-bit operating

system (and as much memory as the computer will accommodate) if your employees use multiple memory-intensive applications on a regular basis.

Wireless

Having the ability to connect to the Web in a variety of ways is very important for every road warrior. It will ensure they will be able to gain access to the company's intranet or download a report from anywhere at any time. Almost all notebooks geared toward business users will include an Ethernet port for wired connectivity, but also support for a wide range of wireless LAN standards (802.11a/b/g/n). Wireless N is a great asset to have on your notebook because it facilitates the fastest wireless Internet speeds (up to 300Mbps) and has a broader range than its predecessors (more than 300 feet).

Many notebook manufacturers have started rolling out support for WiMAX (Worldwide Interoperability for Microwave Access) and WWAN (Wireless Wide Area Network) to improve the speed and range of your connection. WiMAX is designed to deliver wireless Web capabilities to metropolitan areas through its 30-mile range for fixed stations. It is currently available in a handful of areas across the United States, but there are plans for it to expand to other areas. It offers download speeds from 3 to 6Mbps and upload speeds peaking at 5Mbps.

Built-in WWAN (also known as mobile broadband) connects your notebook to the Web using cell towers. This means you can forget searching for Wi-Fi hotspots. WWAN lets you connect to the Web from anywhere your mobile phone can obtain a cellular signal. However, you will need a plan from a service provider such as AT&T, Sprint, T-Mobile, or Verizon Wireless. While it's more convenient to get a notebook with built-in mobile broadband access (and more cost-effective if you are getting a fleet of computers), you can also purchase a mobile broadband ExpressCard to slip into a slot on any notebook that accommodates such a

You can purchase mobile broadband cards, such as the ones shown here from Verizon Wireless (\$49.99 with a two-year contract; www.verizonwireless.com), along with a service plan to get mobile broadband access.



card. USB adapters for mobile broadband are also widely available.

Bluetooth is another good wireless technology to have on a notebook. It lets you quickly sync your phone and computer and transfer documents and other files. Plus, you can connect Bluetooth-enabled accessories, such as a mouse or headset. This short-range communication technology doesn't use much power from either device, so it won't drain the life out of your battery.

Ports

Because many accessories, including mice, portable storage devices (such as a flash drive or a portable hard drive), and a variety of adapters require a USB port, be sure the notebook you choose has at least four. Additionally, a built-in memory card reader will let you transfer media right from the card to the computer, without having to pack a memory card reader in order to work with photos and videos from a conference or other event.

When it comes to choosing among video ports such as VGA (Video Graphics Array), DVI (Digital Visual Interface), HDMI (High-Definition Multimedia Interface), and DisplayPort, consider both your future and legacy products. VGA and DVI are older video graphics technologies, while HDMI and DisplayPort were created within the past few years to accommodate high-definition and high-resolution video. Having both HDMI and DisplayPort connections is important, because each technology supports different types of video products, such as cameras, high-definition camcorders, Blu-ray Disc players, HDTVs, and monitors.

Additionally, an eSATA port and a FireWire port are handy for some external hard drives and optical drives (although you'll find fewer and fewer FireWire devices as that interface is fading quickly from view). The eSATA standard is ideal for transferring large amounts of information to storage because it's faster than both USB and FireWire technologies.

Conferencing & Multimedia

There will likely be times when your employees will need to participate in a Web conference outside the office, so be sure the notebook you choose gives your employees a simple way to set up and participate in an online conference. Some notebooks are listed as VoIP-optimized, which means they offer a built-in Web cam with relatively high-quality speakers and a microphone.

Purchasing a notebook with an integrated Web cam will eliminate the need to carry around an external Web cam in your laptop bag, and it decreases the chance of losing, breaking, or forgetting the accessory on a trip. Most integrated Web cams feature just 2 to 3MP, but that's all you should need for Web conferencing purposes.

Speakers and a microphone are an integral pair of features for Web conferencing, because it's important that you and the other participants can understand what everyone is saying through crisp, clear voice transfer. Some notebooks offer stereo-quality speakers and a high-definition digital microphone to ensure everyone can be heard.

The Decision

A business laptop doesn't come in a one-size-fits-all package. Luckily, many manufacturers will let you customize your notebook, so you can pick and choose where to splurge and where to save. As you pick your features, however, it's better to spend a little extra in order to be sure your investment will last your company for awhile. When your notebooks have room to grow with RAM, processing power, and drive capacity, and you have included the newest communication technologies (such as WiMAX and mobile broadband) coupled with advanced multimedia capabilities and durability, your investment will take you further into the future than notebook models that lack the latest mobile computing features. ▲

Bluetooth is another good wireless technology to have on a notebook. It lets you quickly sync your phone and computer and transfer documents and other files.



PROCESSORS

Here are some common processor families you'll choose from while hunting for a notebook.

Name	Clock Speed (GHz)	Wattage	Cores
AMD Phenom II	1.6-2.1	25-35	2 to 4
AMD Turion II	2.2-2.5	25-35	2
AMD Athlon II	2.1-2.3	25-35	2
Intel Core i3	2.13-2.26	35	2
Intel Core i5	2.53-1.066	18-35	2
Intel Core i7	1.06-2.66	18-45	2 to 4



Notebook Security

Inside & Out

by Nathan Lake

In the rush of business travel, even the most reliable employees can lose their notebook in the shuffle between destinations. And even if the notebook is securely in their possession, skillful hackers may be able to access the computer when it's connected to a public network. Your organization will want to implement security on the notebook to help avoid the exposure of sensitive information, which can cripple a company both legally and financially. Here, we'll cover the key options businesses should consider.

allows you to protect individual files and folders, because full disk encryption also prevents unauthorized access to the operating system, temporary files, and deleted files.

Full disk encryption works by encrypting all data as it is being written to the hard drive, and it decrypts the data when it's read. With a typical full disk encryption tool, you are required to provide one or two forms of authentication when the PC is booting up. If the password or fingerprint (or both) aren't entered, the information on the hard drive stays encrypted.

Most current full disk encryption options use the 128- or 256-bit version of AES (Advanced Encryption Standard), which is a type of encryption that was first developed and is still used by the U.S. government.

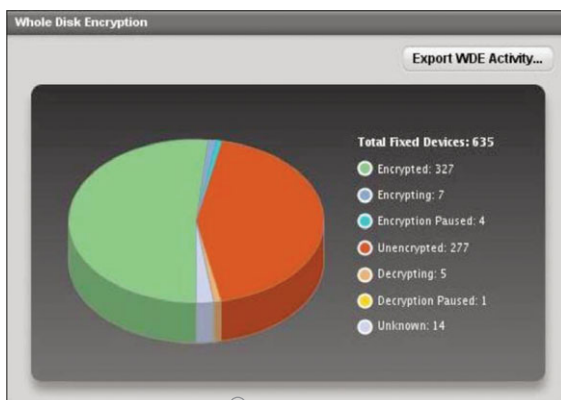
Full disk encryption is available as a hardware component or a software application. For example, PGP's Whole Disk Encryption (\$149; www.pgp.com) is an application that encrypts your entire disk, including swap files, system files, and hibernation files, as well as removable media, such as USB drives. The Whole Disk Encryption software prompts you for password credentials, and you can require employees to provide an additional form of token, such as a smart card.

If you prefer hardware-based encryption, look for models that support the Trusted Computing Group's Opal specification, which you can find

Full Disk Encryption

One of the most important security considerations is that the measures need to be easy to implement and use for the employee. Full disk encryption is ideal because it can encrypt all of the data on a com-

puter, and the employee just needs to enter the same type of secure authorization (such as a username and password or fingerprint swipe) that they already use to log in to the notebook. Full disk encryption is more secure than file encryption, which



You can protect sensitive notebook data with PGP's Whole Disk Encryption utility.

from vendors such as Lenovo and Toshiba. Notebooks that meet the Opal specification feature hard drives that are self-encrypting, so the notebook won't have to use processor resources to encrypt and decrypt the content.

Internet Security Suite

To protect against viruses, spyware, and hackers, you'll want to equip your business notebooks with a security software suite that includes antivirus, antispyware, and firewall protection. The other plus of an Internet security suite is that your employees and IT staff can manage all of the security tools from a single interface. The newest advancement in stopping malware is heuristic scanning, which examines the patterns of existing viruses and spyware to detect similar malware that has yet to be cataloged by a security provider.

Most Internet security suites are also capable of protecting your PC against malware that's distributed via IM (instant message) programs, pop-up ads, rootkits, keyloggers, and phishing attacks. To do so, the security tool will integrate with the Web browsers on your computer to warn you—in real time—about problems that could arise if you continue on to a suspicious Web site. For example, PC Tools Internet Security (\$49.95 per year for as many as three computers; www.pctools.com) features a Browser Defender feature, which displays site ratings for Web sites to alert you about problematic Web addresses before you even click a link.

No matter what type of virus and spyware protection you have, some malware will find a way through your security maze. For this reason, it's essential that your Internet security suite offer a

two-way firewall. A traditional firewall monitors the Web traffic entering a computer, but with a two-way firewall, a notebook can also watch the network data leaving the PC. The ability to monitor outgoing signals will help to prevent personnel information from being delivered to hackers.

If, for instance, malware were to install a keylogger program on your PC, the two-way firewall

could keep the keylogger from sending out what you typed. One example of an Internet security suite with a two-way firewall is Trend Micro's Internet Security Pro 3.0 (\$69.95 per year; www.trendmicro.com), and it gives you the ability to remotely encrypt confidential files and folders. Additionally, you can install Internet Security Pro on your smartphone to let you remotely erase data if the phone is stolen.

Label Your PC

When focused on preventing theft, it's easy to overlook the possibility that sometimes notebooks get lost and good people find them. Place a tag with a return address and contact information on your notebook. This way, if a security official, lost and found department, or good citizen recovers the lost notebook, they can return it to you.

You can also purchase a label from a service, such as StuffBak (www.stuffbak.com) or ImHonest (www.imhonest.com), that provides those who find the lost notebook a toll-free number that they can call any time of the day. Most of these services also offer easy ways to send the device back to you, such as returning it to a UPS store.

Recover Or Erase

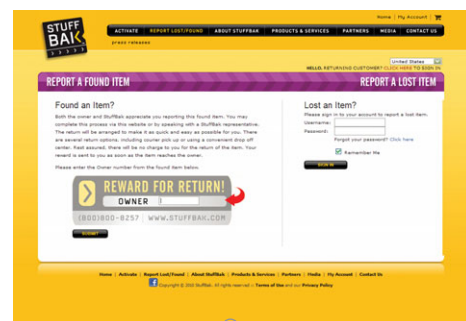
If it's essential that the data on a notebook not fall into the wrong hands, consider a service that allows you to remotely trace the location of your notebook and delete the contents of the hard drive. For instance, Absolute Software's LoJack For Laptops (\$59.99 for Premium Edition; www.absolute.com) can watch for a lost computer, identify it when it connects to the Internet, analyze the data, and provide information that will help law enforcement officials recover and return the lost notebook to you. The Premium Edition of LoJack also allows Absolute Software to remotely erase the sensitive files on your hard drive.

Final Thoughts

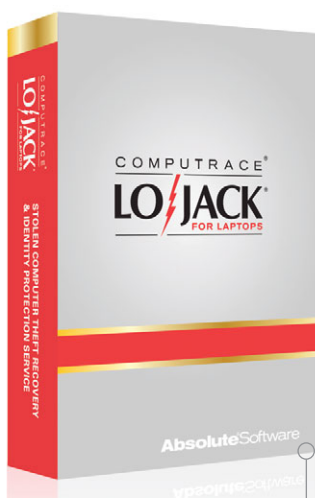
When you're not using the notebook, it's best to keep it in a secure place, such as inside a locked briefcase. If your employees often use your notebook in public places, such as a coffee shop or hotel lobby, it's a good idea to invest in notebook locks, similar to bike locks, that you can wrap around the leg of a desk or other stationary object. This way, you can step away from the notebook for a brief moment if you need to. ▲



Trend Micro's Internet Security Pro with real-time threat prevention is ideal for protecting your notebook when it's connected to public networks.



Labels from StuffBak make it easy for someone to return a lost notebook.



LoJack For Laptops is a service that can help you reclaim and remotely erase data from a lost notebook.

Notebook Power

How To Treat Your Battery

by Rod Scher



Everything about your notebook computer gets more powerful—and less expensive—every year: CPUs, hard drives, and displays are all bigger, better, faster, and more efficient this year than last. But not the storage battery, the device that powers these machines.

The battery remains your system's Achilles' heel. Although processing and storage power skyrocket every year, battery capacity improves at a rate of only 8% or so per year. Over the past 10 years, the Li-Ion (lithium-ion) battery first introduced commercially by Sony in 1991 has doubled its energy capacity; a meaningful improvement, to be sure, but not one that keeps pace with other technology developments. (Ironically, improvements in battery power don't normally result in increased runtime, because the notebooks themselves continue to get more powerful and, therefore, demand more of the battery; the net result is a better battery but a zero gain in longevity.)

Given that the battery is your computer's weak link, it's important to treat it well. We'll show you how to get the most out of your notebook computer's battery.

It's Not Your Father's NiCad

Today's notebooks use Li-Ion batteries and not the NiCad (nickel-cadmium) devices that powered older devices. And Li-Ion batteries—the active components of which these days are mostly cobalt and graphite—utilize a completely different chemistry than the Ni-Cads; they require different treatment than the older batteries.

Conditioning vs. calibration. Conditioning and calibration are not the same. NiCads often

required conditioning (usually including a complete discharge) to get the most out of them, but Li-Ions do not. Older NiCads exhibited a "memory" issue in which the battery could not take a charge greater than the level of the previous remaining charge unless the battery was first completely discharged. Li-Ion batteries do not have this problem. Thus, rather than completely discharging your battery and charging it less frequently, you'll get more life and more reliable power from your Li-Ion by avoiding frequent full discharges and instead recharging or "topping off" more frequently.

However, there is one instance in which you would purposely discharge your Li-Ion battery. It's not an attempt at conditioning the battery, rather a way to sync the battery with your notebook's on-screen battery power gauge. Over time, your battery and your gauge will fall out of calibration, with the gauge becoming a less and less accurate reflection of how much battery power is actually left. This is why your notebook's on-screen gauge might indicate a 30-minute reserve and then suddenly shut down with no warning.

The rule of thumb is to calibrate once every 30 or so charges. To do so, simply discharge the battery completely, and then recharge it to 100%.

Note that inaccurate calibration often has little direct effect because even though the gauge is in error, your system is smart enough not to shut itself down simply on the say-so of the inaccurate gauge. Thus, the gauge might show a 20-minute reserve and run for an hour or more. In a case like that, though, your gauge ceases being helpful and becomes more of a nuisance, so you might as well calibrate and get some real use out of it.

Get The Most From Your Notebook Battery

Unfortunately, one of the worst things you can do to a Li-Ion is to keep a fully charged battery at elevated temperatures, which is exactly what we do when we place one in a notebook. Notebooks get hot, and notebook peripherals



These two batteries, a 6-cell (left) and a 9-cell (right), are the same size, but the 9-cell battery weighs 65% more, offers about 66% more power, and costs roughly 87% more than the 6-cell device.

can put quite a strain on a battery, causing the batteries to heat up even more quickly. Heat is your enemy. Batteries live longer when they stay cool; a short battery life is most often caused by heat, and by keeping a fully charged battery in a warm environment.

Power drain. What uses up battery power? Everything. But some things use more than others. Your notebook sitting idle uses very little power. (Which is why manufacturers like to estimate run-time based on an idle system. Not much help in the real world, unfortunately.)

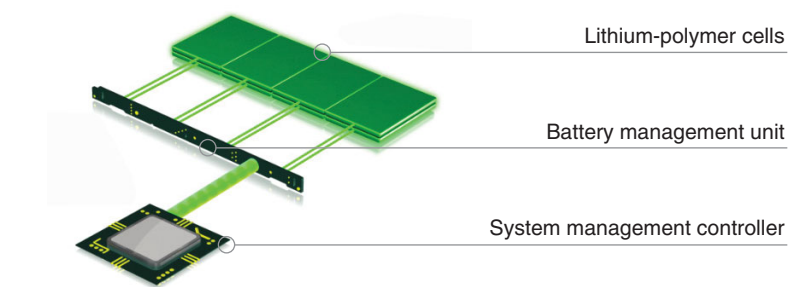
Heavy-duty processing uses a surprising amount of power, although processors made for mobile use are more efficient now than a few years ago. But if you're editing video, playing MP3s, or doing heavy-duty spreadsheet work, you're going to hit that battery pretty hard.

Connecting to and utilizing a wireless network is a power drain, but once connected, the effect is mostly dependent upon how much uploading and downloading you're doing. Still, merely maintaining a connection takes a certain amount of power, so turn off your notebook's Wi-Fi when you aren't using it. (Ditto for Bluetooth, if your notebook is so equipped.)

Ever wonder why you can't get through an entire DVD movie when you're on the plane? It's because displaying a movie requires your system to do things that use an incredible amount of power: First, the system has to physically drive the DVD player, constantly rotating the spindle and deploying the laser. Second, the system must convert and render on the fly the actual video; this tasks the video card (which on a notebook may not be a separate card at all), requiring additional processing and generating more heat.

All in all, it's a pretty heavy-duty undertaking in terms of power requirements. Make sure your battery is fully charged (top it off during your layover, if possible) if you intend to watch a movie. Better yet, if possible (and legal), transfer the movie to your hard drive and run it from there; that requires much less power. (Running it from a flash drive requires even less, of course.)

Maximize battery life. The most effective way to maximize your battery life is to avoid heat. Use notebook cooling pads and stands, and don't store the computer in your car on hot days. Some experts recommend removing the battery when you're running under fixed power, but that doesn't always work: Some notebooks won't run at all without a battery present, and some manufacturers worry that the empty battery compartment might collect moisture or dust.



For prolonged storage, charge your battery to about 40% and place it in the refrigerator (not the freezer). Be sure to allow it to warm up to room temperature before use in order to avoid condensation; otherwise moisture on the battery might get into your notebook. If you have a spare battery, use one normally and store the other in the refrigerator until it's needed.

Remember, a Li-Ion battery has a useful life of two to three years, whether or not you use it. Don't buy older batteries, even if the prices look good. They simply will not last very long. Buy them as needed, and buy them as fresh as possible; check the manufacturing dates.

Avoid frequent full discharges. Instead, top off your battery whenever possible.

6-cell vs. 9-cell: bigger payload, bigger payoff. Depend-

ing on the cost and on the uses to which you put your notebook, you may find that it's worth opting for a battery with more cells—more cells mean more power and thus a longer runtime between charges. A move from 6 cells to 9 cells in a Lenovo N100 series notebook, for example, means a jump from 4.4Ah (amp-hours) to 6.6Ah. This can translate into as much as a 50% gain in runtime, but that is very dependent on your system, on the uses to which you put it, and on the environment in which the system is performing. Still, if you can gain a given percentage in runtime while spending less than that percentage more on the battery, it may be worth looking into.

Remember, though, that there is a tradeoff. Batteries that have more cells are heavier and often larger.

Lithium-polymer cells

Battery management unit

System management controller

Apple has taken some heat for producing devices, such as the MacBook Pro, in which users cannot replace batteries but have to return the product to Apple to have a new battery installed. However, this approach allows Apple to supply batteries that it can guarantee are fresh and safe, and it helps the company keep tabs on battery longevity.

	NEW BATTERY for GATEWAY LAPTOP 6MSBG 6MSB PA6A SQU-412 Fast Shipping! USA Seller! 3 year warranty Enlarge	 Top-rated seller	Buy It Now \$31.75 Free shipping
	NEW LI-ION LAPTOP BATTERY FOR HP PAVILION DV6000 DV2000	 Top-rated seller	0 Bids \$24.99 Buy It Now \$27.99
	New 9-Cell Laptop Battery for DELL LATITUDE D630 D620		0 Bids \$49.98 Buy It Now \$55.98

You *can* find good battery deals online, but be careful: The fact that a battery is "new" does not necessarily mean that it's "fresh." It may never have been used, but it might have been sitting on a shelf for months or even years. Cobalt-based Li-Ion batteries have a shelf life of two to three years, used or not.

MOBILE OFFICE BUSINESS ON THE ROAD

GET THE MOST FROM YOUR LI-ION BATTERY

DO:

- Stay cool. Heat destroys batteries.
- Avoid frequent full discharges; Li-Ions do better with multiple partial discharges and frequent recharges.
- If you have a spare battery, charge it to about 40% or so and place it in the refrigerator.
- Avoid extreme loads and repeated deep discharges, such as might be encountered when watching multiple DVD movies on battery power.
- When you do fully charge your battery, use it as soon as possible; remaining at its highest state of charge is not good for the battery—prolonged high voltage causes battery corrosion.

DON'T:

- Unless you absolutely must have a spare handy, avoid purchasing extra Li-Ion batteries; they'll only go stale before you get a chance to use them.
- Avoid storing a battery at full charge and in a warm place; both accelerate the battery's aging.
- Don't completely discharge the battery, except when calibrating; a deep discharge contributes to battery wear.



Cooling stands and pads, such as this one from Evercool (www.evercool.com), will help keep your notebook cooler, thus maximizing battery life.

We would be remiss if we didn't take this opportunity to remind you that there are good and bad ways to dispose of your used Li-Ion battery. Tossing it in the household trash is bad. We recommend taking the battery to a recycling center or to a company such as Best Buy, which will send it to a recycling center, usually at no cost to you. Very often the company from which you purchase your new battery will recycle your old one for you at no charge.

Treat It Gently

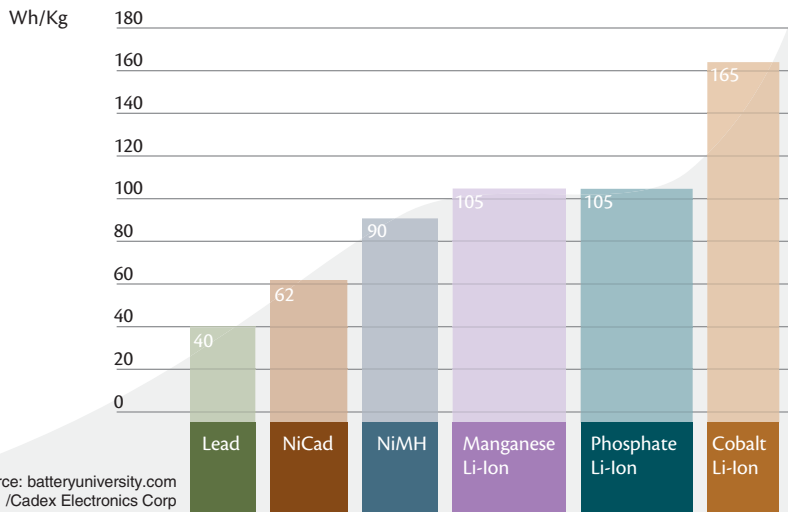
Your battery is your notebook computer's weakest link. It's heavy, it's expensive, and it doesn't last nearly as long as we'd like it to. Treat it with care and you'll maximize your battery's performance and minimize both your costs and your frustration. ▲

Discard Your Battery

If your notebook battery won't hold a charge and it's two or three years old, assume that it's time for a replacement. If it's only six months or one year old, then you may have a charging issue, or you may have a "stale" battery.

POWER & BATTERY TYPES

Over the years, a variety of battery technologies have been (and continue to be) used. Here's how they stack up in terms of their power density. Note that the manganese and phosphate Li-Ions deliver somewhat less power than cobalt-based batteries, but they're actually more stable than the cobalts.



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Music
Homework
Documents
Bookmarks

Graphics
Payments
Videos
Recipes

Games
Writing
Scam
Term

Why **LBS** Matters

It's All About Where You Are & What You're Doing

by Joanna Safford

Each new turn in mobile tech seems like it will lead to the next best innovation. But, for every not-so-popular device, clumsy application, or trivial Web site development craze, there's something new that sticks around and makes it big. Facebook and Twitter are exceptional examples. This year, however, research analysts predict that LBS (location based services) will take "geosocial networking" to the next level. And, this is precisely why LBS matters right now. LBS developers have the potential to create a highly competitive environment, that is if companies can identify which direction LBS should go over the next several years.

What It Is & Where It Will Take Us

You might associate LBS with a collection of features embedded in most GPS devices. These services include turn-by-turn directions, nearby gas station identification, listings of restaurants, and other secondary navigation features. However, LBS isn't limited to figuring out the location of the closest drive-through coffee shop.

To get down to it, LBS applications on mobile devices can provide social, personal, and business-oriented services that will geotag your location. These services or apps are based on position-location technology, such as built-in GPS and A-GPS. Some of the developing LBS apps encourage users to play a type of geolocation game, wherein the handset user tags places they visit (via the Web or SMS). But truly, determining your location is half of LBS; sharing

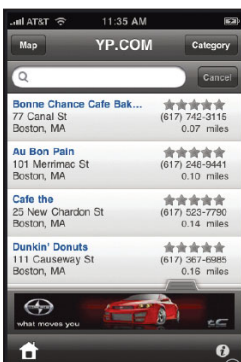
LBS gives the user access to a business-savvy game in disguise.

Because LBS is useful to the consumer and business owner, tech companies and burgeoning mobile app developers are making a name for themselves in the rapidly expanding LBS category. Now that LBS is soon to penetrate both urban and rural areas (including such places as Malaysia and Indonesia), it only seems fitting that major corporations including Nokia, Facebook, Twitter, Google, Apple, and Microsoft are planning to engineer new LBS applications through strategic partnerships and acquisitions. IMS Research indicates that LBS services are on the verge of stimulating revenues. Juniper Research reports that LBS could reach \$12.7 billion in revenues by 2014.

Geo-Advertising Goes Mobile

Where (www.where.com), an LBS recommendation service, is a part of the latest LBS surge. It's ideal for business travelers who may be searching for information about events, restaurants, traffic, and weather in an area they are visiting. But, Where has a grand master plan to ensure that it's part of the LBS providers reaching revenue highs in the next four years.

According to Dan Gilmartin, vice president of marketing at Where, there are two primary revenue models for LBS: subscription fees and advertising revenue. He believes the trajectory for business is great because he's seen how Where has taken off in the last year.



Where uses hyper-local advertising that's nonintrusive for vendors and consumer-friendly.

"Local, mobile search gives merchants the opportunity to get in front of highly qualified leads. Specific to Where, monetization of engagements between merchants and consumers ranges from \$0.02 to \$0.10," says Gilmartin. "We've been able to turn that into revenue and have been profitable for almost a year."

For Where, ROI is evident via multiple avenues (such as applications for local search, social networking, maps, and navigation) but is primarily indicated by daily use by the consumer. The services that utilize advertising networks have become an integral part of daily life, says Gilmartin, giving consumers the ability to remotely discover locations that are around them from their handheld devices.

And, according to Gilmartin, this has made the handheld device an incredibly powerful advertising platform. "We see the ad market shifting from PCs and laptops to handheld devices. This is because consumers can receive coupons and offers, which effectively turn[s] their mobile devices into money savers," he says. "From the local business perspective, LBS arms merchants with the power to target appropriate individuals to offer them relevant deals to help them drive foot traffic."

On the profitability of the LBS market, Gilmartin stands behind the potential of local search and advertising, even when he may not be part of the majority.

"While the analysts differ on the value of the sector, they all agree that the business is worth

Because LBS is useful to the consumer and business owner, tech companies and burgeoning mobile app developers are making a name for themselves in the rapidly expanding LBS category.

billions," says Gilmartin. "Another category that may not be specifically included in these forecasts is local search."

He believes that the expansion of LBS will come from hyper-local advertising, for instance, connecting a merchant with a local audience. Gilmartin says, "Significant growth will come from some of the traditional methods that small businesses have employed to reach an audience, such as yellow page advertising, which has an enormous market value."

Consumer-Driven Meets Business-Oriented

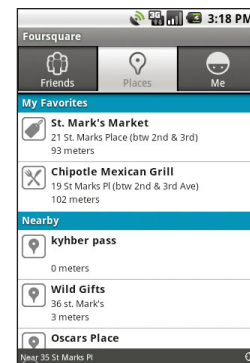
Where represents the new generation of apps that make it fun for consumers and business-owners to engage in LBS. And, so does Foursquare (www.foursquare.com). The app features a reward system that propels people to visit locales by granting users a "Mayorship" and a badge every time he visits new spots or returns to a regular locale. Available on iPhone, BlackBerry, Android, and Palm devices, Foursquare invites business owners to promote their establishments by offering mobile customers "Specials." Loyal patrons receive discounts when they frequent the same spots. These come in the form of Mayor Specials (for the most loyal customer), Check-Specials, Frequency-based Specials, and Wildcard Specials.

Foursquare manages the business owner's venue statistics, indicating the most recent visitors, when they check in, number of check-ins per day, and a breakdown of customer demographics. Foursquare's business plan makes hands-on LBS affordable for businesses and incredibly accessible for mobile users.

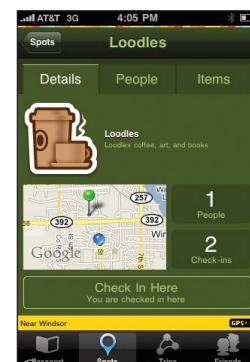
Foursquare and a similar geosocial networking app, Gowalla (www.gowalla.com), have been competing for user business in the past year or so, and it seems Foursquare is the ace in terms of Google searches, according to Google Trends. That doesn't mean Gowalla is bad for business, though. Gowalla uses the check-in system at particular Spots (coffee shops, malls, bookstores, and so on) to reward

mobile users. In addition to making the app available for the iPhone, as well as particular models of Android, BlackBerry, and Palm devices, Gowalla offers an iPad app that lets you create your own Spots and pick up and drop items.

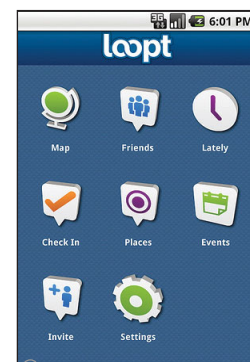
In addition to Foursquare and Gowalla, you may also consider Loopt (www.loopt.com). The location-based mobile app developer recently released Loopt Star, a feature that rewards geo-exploration in the same way as the previously mentioned apps. It's integrated with Facebook and functions as a rewards card for certain brands. Loopt is particularly brand-friendly, letting businesses take control of which coupons they will redeem. Supported by 100 phones offered by major U.S. carriers, Loopt is available as an iPhone/iPod touch, BlackBerry, and Android app. ▲



The Foursquare app is designed to help businesses reward loyal customers. Venues can provide specials for their mobile clients so those clients keep coming back.



Gowalla gives you the option to check in at locations on a supported mobile device or iPad app.



Loopt's geosocial networking app helps you discover events in unfamiliar cities and lets you Ping your Loopt friends.

For Your Notebook

Software & Updates

by Joanna Safford

Updating programs and adding new software will only help you streamline business that you conduct from your mobile office (you know, that notebook that's always by your side). Staying on top of the new and latest releases can be a chore, though. We've funneled the surplus of software floating around the Web down to a list that's informative and timely. So, instead of lagging a few months behind the software

learning curve, download these updates and services as they're made available.

PhatWare Updates PhatNotes Desktop

PhatWare (www.phatware.com), manufacturer of software and computing services, has released Edition 5.6 of PhatNotes Desktop, free for PhatNotes 5.x registered users and available for

a street price of \$19.95. In addition to support for Windows XP/7 and Server 2003/2008, PhatNotes Desktop Edition 5.6 syncs with Windows Mobile 5.0 (ActiveSync 4.5 or WMDC 6.1). Functioning as a professional

note organizer, Edition 5.6 includes 200 icons purposed for note items and folders. PhatNotes lets you search and sort notes by category, date, priority, color, or subject. There is also a PhatNotes (1.3) app available for the iPhone or iPod touch.

WinZip Adds Office 2010-Style Ribbon Interface

The most recent version of WinZip (www.winzip.com) file compression software, edition 14.5, is configured for Win7 with a ribbon-based user interface designed to match the same Office 2010 feature. The Home tab is optimized for creating a brand-new .ZIP file by selecting files to compress. 1-Click Unzip automatically extracts

what's inside the .ZIP file when creating a new folder in Windows Explorer. Other new ribbon features include Auto Open for Windows Explorer or Microsoft Outlook, Attach To Email button, Encrypt checkbox, and Backup tab. Pricing for WinZip 14.5 starts at \$29.95 for WinZip Standard and \$49.95 for WinZip Pro.

FastTrack Schedule 10 Manages Small To Midsized Projects

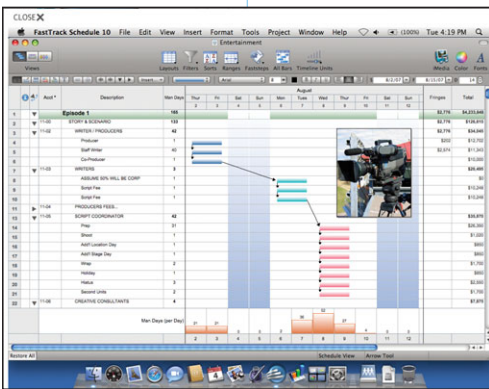
Designed to make project execution easier for managers, AEC Software's FastTrack Schedule 10 (prices vary; www.aecsoftware.com) features customized calendars, effort-driven scheduling, assignment contouring, and resource usage graphing. In addition, the Image Columns feature automatically scales images on image columns for tasks, designs, and progress photos. Using the Fixed Duration scheduler assigns a time duration to projects on a deadline. FastTrack Schedule 10 is also purposed for sharing and integrating project data between users with Microsoft Project, Excel, and iCal (Mac).

Adobe Introduces Creative Suite 5

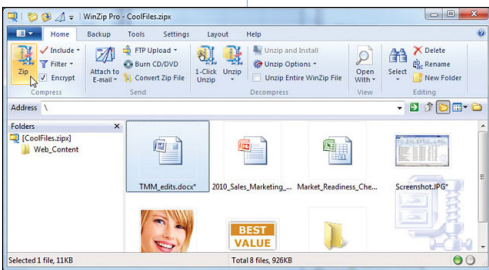
Adobe's newest content production package is the Adobe Creative Suite 5 (www.adobe.com) collection, which includes the Creative Suite 5 Master Collection (Photoshop CS5, Illustrator CS5, InDesign CS5, Flash Catalyst CS5, Flash Professional CS5, Dreamweaver CS5, Adobe Premiere Pro CS5, and After Effects CS5), Creative Suite 5 Design Premium, Creative Suite 5 Web Premium, Creative Suite 5, Production Premium, and Creative Suite 5 Design Standard. Adobe also offers Flash Player 10.1 and Adobe AIR 2 for displays on mobile devices. Adobe Premiere Pro CS5 users can rely on the Nvidia GPU-accelerated Adobe Mercury Playback Engine to render rich HD effects.

Omniture SearchCenter Plus Streamlines Social Advertising

Adobe-owned Omniture has released Omniture SearchCenter Plus, a marketing tool that provides users with Facebook advertising feedback. By measuring, managing, and reporting display ads, the Omniture SearchCenter Plus enables advertisers to



FastTrack Schedule 10 uses an interface similar to the iWork suite, featuring a Format Bar.



The latest version of WinZip includes an automated data backup utility for scheduling file backup or burning data onto CD, DVD, network drive, or server.

create appropriate bid strategies, streamline site conversion statistics, organize campaign reporting, and target ad buys.

Corel Releases New Version Of WordPerfect Office

Equipped with Web collaboration tools, an integrated email client, and more file format support, Corel's WordPerfect Office X5 (www.corel.com) provides more productivity options for online and offline workflows. Specifically, the newest version of WordPerfect Office supports word processing, spreadsheets (Quattro Pro X5), slideshows (Presentations X5), and digital note taking (WordPerfect Lightning).

Furthermore, WordPerfect Office provides an entire suite of PDF tools that help you create and password protect new PDFs. You can annotate and organize PDFs for sharing using New Nuance PaperPort SE 12, as well. Mozilla Thunderbird for WordPerfect Office features an integrated email client and tabbed email view for the calendar. The Standard Edition of Corel WordPerfect Office X5 upgrade retails at \$159.99, and the full version is available for \$249.99. The Home & Student Edition is \$99.99, and the Professional Edition full version is \$399.99.

New Firefox Beta Available

The beta release for Mozilla Firefox (www.mozilla.org) enables the Firefox browser to reload Web pages and restart plug-ins if and when a plug-in crashes or freezes. This release applies to Windows and Linux users who are using the following plug-ins: Adobe Flash, Apple Quicktime, or Microsoft Silverlight.

PDFZilla Does Its Best At Converting PDF Files To Word

If you've tried to copy and paste PDF text to a Word document, it's obvious that the transition isn't seamless. Correcting these format irregularities is a significant annoyance, so it's good to know someone has developed a program to minimize paragraph inconsistencies. PDFZilla 1.2 (www.pdfzilla.com) will convert half of your text in the demo version; you can convert all of it after registering the program. In general, PDFZilla will preserve the original format of the text if it's organized in a simple form. PDFZilla is priced at \$30 and will run on Windows Me/2000/XP/Vista.

Antivirus Updates

Symantec (www.symantec.com) has released its Norton AntiVirus Virus Definition and Definitions

Update (x86 Package). The Virus Definition adds new protection updates for download. Norton AntiVirus subscribers can take advantage of this update. The Definitions Update (x86 Package) is a file download designed for detection and repair; it replaces any older definitions. This option is ideal for rolling out updates on multiple computers. Both updates apply to Windows 2000/XP/Vista.

McAfee (www.mcafee.com) has also announced Virus Scan updates (version 6000) for Windows 98/NT/ME/2000/2003/XP/Vista.

OpenOffice Mac Update Is Ready For Download

The open-source office productivity suite, OpenOffice 3.2.1rc2 (www.openoffice.org) for Mac, now has new language options, complete with spell checking, number formatting, and outline numbering. The most recent data additions for language selections are "Oromo_Ethiopia," "Uyghur_China," "Greek, Ancient," "Somali_Somalia," "Sorbian, Lower," "Sorbian, Upper," and "Asturian_Spain." This update requires Mac OS X 10.4 or later.

New Quicken Release Fixes Bugs

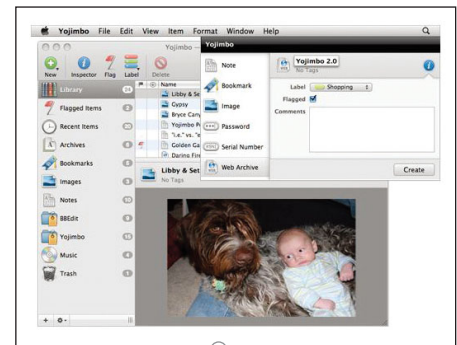
Intuit's Quicken Essentials for Mac (\$49.99; quickenintuit.com) has been updated to version 1.4.1f4856. The update fixes two bugs: One removed custom reports from Quicken Essentials version 1.3.1 or earlier, and one disabled certain menus after setting a data file password. Quicken Essentials helps you avoid late fees and gives you an overview of your financial portfolio using transaction data from more than 12,000 financial institutions.

Yojimbo 2.2 Exports Data To Web

Yojimbo (starts at \$39; www.barebones.com) by Bare Bones Software is a Mac OS X program that collects, stores, and organizes the data on your system. It manages your rich text, images, PDFs, passwords, and other personal data. Bare Bones Software has added Yojimbo Sidekick to the features, which makes selected Yojimbo data available as a Web page. Sidekick lets you choose which items you want to export to particular folders. ▲



The full version of PDFZilla 1.2 converts a PDF document into a Word document, image, Plain Text file, HTML, or Shockwave Flash file.



The Yojimbo 2.2 update lets you export your files as a Web page.

For Your Smartphone

Software & Updates

by Nathan Lake

You probably rely on your smartphone for many things, but with new software and updates, you can improve the efficiency and functionality of your mobile phone. Here, we'll detail the most popular newly released software and key updates to help you maximize your smartphone's ability to help you while you're on the road.

New For Android

Google recently released **Android 2.2**, which features an Android browser that can run Adobe Flash content. Users also have the ability to turn their phones into Wi-Fi hotspots. Interface changes include a Recent Apps menu that shows the eight most recently opened programs, and there are phone and browser icons on every page of the Home screen. In terms of features, Android 2.2 includes a Running Services menu that lets you stop services and applications, and you can configure programs to retrieve and install the latest app updates automatically from the Android Market. And with version 2.2's Apps2SD feature, you can install applications directly from the SD card.

The **Fring** (free; www.fring.com) update lets you do more than IM and chat with others using your Android phone. The latest version adds support for two-way video calls, so people with phones featuring a

The new version of Fring for Android supports two-way video calls.



front-facing camera can chat face-to-face. Because the two-way calling feature requires a lot of processing power, Fring tests your mobile phone to determine if it can handle the video call features.

DataViz added a number of features in the 3.0 update for **Documents To Go** (\$29.99; www.dataviz.com), which provides Microsoft Office-compatible word processing, spreadsheet, and presentation applications. For example, Documents To Go 3.0 supports Microsoft Office 2010 files, and overall, it supports 2003, 2007, and 2010 formats. DataViz also includes a desktop application with two-way file sync to let you transfer updates when the PC and Android phone are connected via USB. To help you browse for files on your Android phone, there's a tool to view, edit, sort, sync, back up, and send files.

To let you view PDF files on your Android phone, Adobe released **Adobe Reader For Android** (free; www.adobe.com). The app supports pinch-and-zoom, flick-scrolling and panning, and other multitouch gestures. We particularly like the Reflow view where Adobe Reader For Android wraps the PDF file to fit the width of the screen and lets you simply scroll down to read the entire PDF. It runs on Android 2.1 or later and requires an Android-based phone with at least 256MB of RAM and a 550MHz processor.

New For BlackBerry

Roll Call Tasks (\$4.99; www.bskyanalytics.com) from Blue Sky Analytics is designed to integrate with the utilities on your BlackBerry to provide a task management program that works with

With new software for your mobile phone, you can improve its efficiency and functionality.

MOBILE OFFICE BUSINESS ON THE ROAD

BlackBerry Calendar and your corporate email. You can create a task and define it with category, due date, due time, notes, priority, and reminder information. The tasks can also synchronize with Microsoft Outlook to link to your emails, calls, and contacts. You can sort Roll Call Tasks by date or category to quickly organize your work.

With **Ricoh Hotspot Printing** (free; www.ricoh-usa.com), you can avoid the hassle of finding ways to print content from your BlackBerry. This app lets you search for and print to publicly available Ricoh HotSpot printers, such as those found in some airline club lounges. No printer drivers or additional software is necessary to install, and Ricoh Hotspot Printing will provide you with a one-time release code, so only you can pick up the documents you print.

New For iPhone

If you're interested in converting movies into a format you can watch on your iPhone, check out **Media Studio For iPod & iPhone** (\$17.95; www.makayama.com) from Makayama. Version 3.5 lets you take movies from DVD, recorded TV, downloaded YouTube content, and home videos from your computer. Makayama indicates that Media Studio can process a full feature film in 45 minutes, and the program runs on the 32-bit versions of Windows 2000/XP/Vista/7.

In **Agendus 2.0 for iPhone** (\$7.99; www.iambic.com), Iambic has completely redesigned the program, including a new interface, features, and views. Agendus works with the native iPhone calendar, contacts, and tasks features to provide one application where you can efficiently manage all your day-to-day business. New interface options include finger-scrolling capabilities and multicalendar views that cover your Day, List, Week, Month, or Year schedules. New items include an Advanced Task Management feature that lets you add recurrence, status, and categories to tasks and an Advanced Contact Management tool that displays thumbnail photos and details for each contact.

Boaters will love Navimatics **Charts&Tides** (\$19.99; www.navimatics.com), a marine navigation app for the iPhone. The program delivers

POI (point-of-interest) information as well as access to the ActiveCaptain database, which is a guidebook for marinas, anchorages, hazards, and bridges.

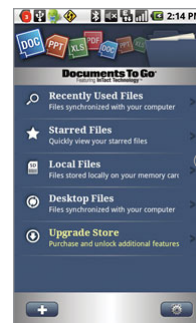
Charts&Tides will also provide information on tides and currents, weather, a sun and moon calendar, and other key boating information. The app supports standard NOAA vector charts, and all chart data is automatically updated when you update the program.

Interested in unlimited free texting and picture messaging? Version 4.0 of Enflick's **TextNow** (99 cents; www.enflick.com) does so using your iPhone's Wi-Fi connection, and it features a new interface that offers faster application and conversation loading than previous versions. Supported carriers for picture messaging include Alltel, AT&T, Cricket,

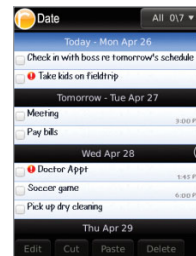
Sprint, T-Mobile, U.S. Cellular, Verizon, and Virgin Mobile. One account can be run on multiple devices, such as an iPod touch or iPad, to take advantage of the Wi-Fi texting service on other Apple devices.

MotionX GPS Drive (99 cents; www.motionx.com) from Fullpower Technologies is a GPS navigation tool that works with TrafficCast to deliver real-time and predictive traffic information to help route you around congestion and reduce drive time. MotionX GPS Drive gathers data from public sensors, weather, construction, and local events to estimate road conditions. The traffic service is available for more than 100 U.S. cities. And in version 3.5, Fullpower Technologies has improved routing and performance for the iPhone 3G.

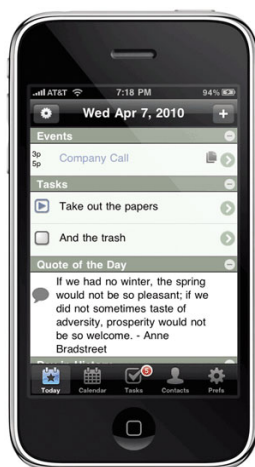
The Weather Channel released version 2.0 of its **Weather Channel Max for iPhone** (\$3.99; www.weather.com), which adds an animated radar of future conditions, a severe weather center, a video center with forecasts for your area, and beach conditions. You will also be able to view the Weather Channel's traffic cams in select areas and see the environment firsthand. The Weather Channel Max interface is customizable, so you can exclude or include radar, clouds, temperature readings, rainfall, and snowfall. ▲



DataViz' Documents To Go 3.0 is compatible with Microsoft Office 2003/2007/2010.



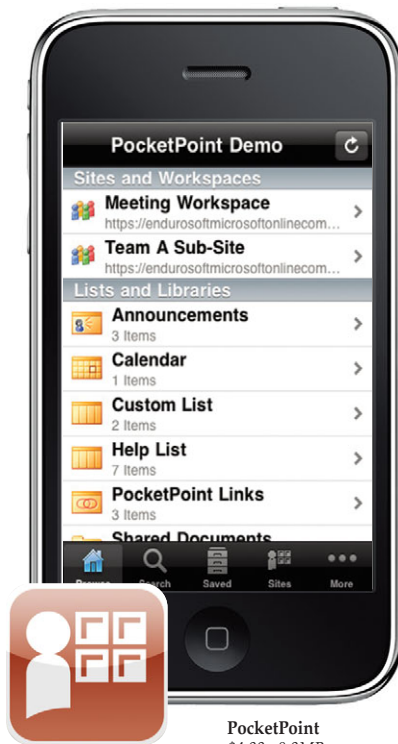
Roll Call Tasks provides your BlackBerry with an excellent task management system.



With Agendus, all your important tasks are accessible from one iPhone application.

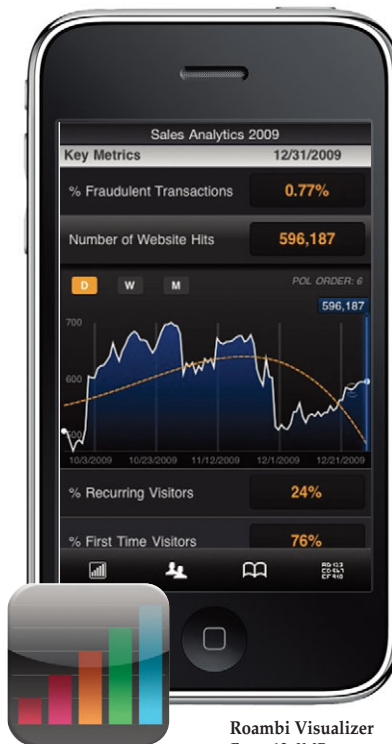
MOBILE OFFICE BUSINESS ON THE ROAD

IPHONE APPS



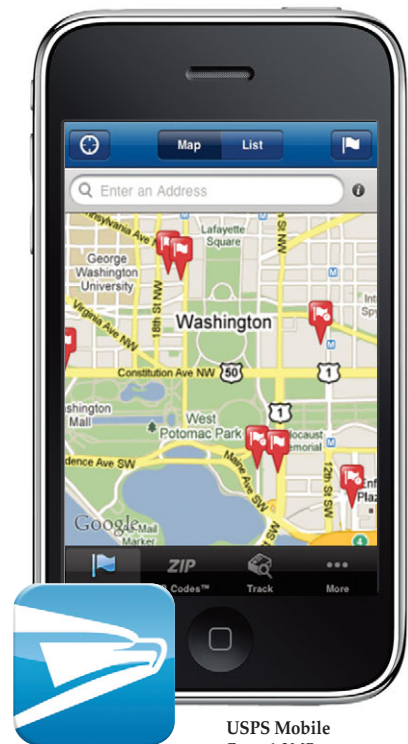
PocketPoint
\$4.99 • 0.9MB

If your organization uses SharePoint, you can use enduroSOFT's PocketPoint (Rel. May 25) to manage SharePoint lists, view SharePoint documents offline, and more.



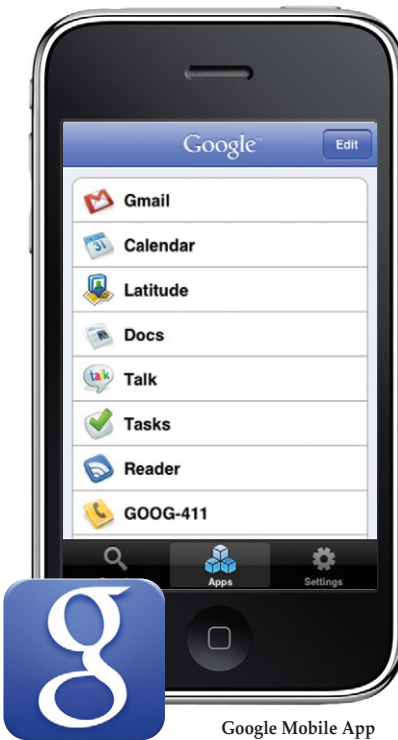
Roambi Visualizer
Free • 12.6MB

The Roambi Visualizer app (Rel. June 15) from Mellmo transforms figures from Microsoft Excel, Salesforce.com, SAP Crystal Reports, and elsewhere into dashboard visuals.



USPS Mobile
Free • 1.2MB

The official USPS Mobile iPhone app (Rel. Jan. 29) from the U.S. Postal Service enables you to track shipments, find nearby post office locations and collection boxes, and look up ZIP codes.



Google Mobile App
Free • 4.6MB

The newest version of Google's Mobile App (Rel. May 10) includes a Voice Search option for googling things quickly. The app also provides quick links to Google Apps (such as Gmail, Calendar, and Google Docs) and map searching.



**Opera Mini
Web Browser**
Free • 1MB

Opera Software's Opera Mini Web Browser (Rel. May 11) offers an alternative to Apple's mobile Safari browser and can run alongside it. Opera claims faster browsing due to data compression.



**Wyse PocketCloud
Remote Desktop**
\$14.99 • 4.2MB

Wyse Technology takes "thin client" technology to the iPhone with PocketCloud Remote Desktop & RDP Client (Rel. June 3), which lets users remotely use Windows desktops (non-Home editions only).

YES, YOU CAN
HAVE A MOBILE WORKSTATION



EUROCOM Mobile Workstations are designed for maximum performance for the most demanding users. CAD/CAM designers, engineers, architects and designers who frequently travel, yet need access to powerful computing, are the core target for Mobile Workstations. With unrivaled power, unsurpassed features and unmatched style, the Mobile Workstation is the ultimate evolution of the Desktop Replacement notebook.

D900F PANTHER

EUROCOM D900F PANTHER is quite the machine with a 17.1" WUXGA 1920x1200 resolution. Powered by Intel® Core™ i7 980X Extreme and/or Intel® Xeon® 5600 series processors and NVIDIA® GeForce™ Go GTX 480M, GTX 285M or Quadro® FX 3800M and Quadro® FX 2800M high performance, fully upgradeable MXM 3.0b video cards. Holds up to 4 physical Hard Drive (up to 3TB of storage) in RAID 0/1/5/10 and up to 24GB of triple-channel DDR3-1333 memory. All while running Microsoft® Hyper-V technology to virtualize any O/S.



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EUROCOM



WebEx Meeting Center

Attend Meetings Wherever You Roam

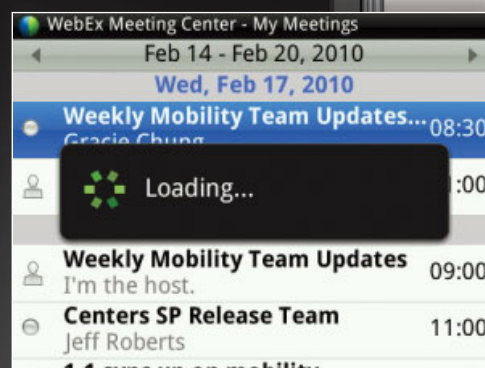
ONE METHOD that companies have turned to in recent years to save on expenditures is conducting real-time meetings with customers, co-workers, and partners online using a Web-based service that provides video-, phone-, and application-, document-, and presentation-sharing features vs. bringing everyone together in one room to do the same. Cisco System's WebEx service (www.webex.com) is one option for Windows, Mac, Linux, and Solaris platforms. The free WebEx Meeting Center app, available from BlackBerry App World, lets BlackBerry users participate in WebEx meetings via Wi-Fi or 3G connections.

You can join a WebEx meeting from your smartphone by starting the app and entering the appropriate meeting number. Additionally, BlackBerry users tapping into WebEx can join a meeting from email and calendar invitations or navigate to the URL associated with a specific meeting. After you join a meeting, you'll be able to see a list of participants, view presentations and apps that other attendees display, participate in public and private chats, hear integrated audio, and initiate a meeting (though you'll need to make another participant the presenter).

What you can't currently do from your BlackBerry is schedule meetings, invite others to attend, or give presentations. Further, scheduling a WebEx meeting from a PC or Mac requires a WebEx host account (starts at \$49.99 per month for unlimited meetings and up to 25 participants; free 14-day trial available). Additionally, Cisco notes that users on CDMA 1X, EVDO, or GPRS/EDGE networks won't have access to simultaneous voice and data connections.



Price: Free | Size: 1,568KB | Released: April 21, 2010



Why You'll Want This App

- Lets you attend Web-based WebEx meetings from a supported BlackBerry smartphone
- You can view shared applications, documents, and presentations
- View a list of others participating in the meeting
- Ability to start a meeting and assign another participant to host it
- You can conduct private and public chats

MOBILE OFFICE BUSINESS ON THE ROAD

BLACKBERRY APPS



See-Fi
\$5.99 • 129KB

See-Fi (Rel. Nov. 30, 2009) from mSeer lets you establish shared scheduling and calendaring with select individuals, whether they are your immediate colleagues or your entire contact list. It's great for coordinating meetings and project planning.



Contacts Cleaner
\$2.99 • 197KB

The newly updated Contacts Cleaner app (Rel. May 30) from Beaver Creek Consulting focuses on doing one thing and doing it well: cleaning up your BlackBerry contacts so there are no duplicate entries.



CallPop
\$5.99 • 41KB

The full version of PC Honey's CallPop (Rel. Oct. 27, 2009) produces a pop-up with caller ID information on your BlackBerry when you receive an incoming call. The app uses existing contact information from your BlackBerry.



Wifi Media Backup
\$4.99 • 159KB

When you have Chocolate Chunk Apps' Wifi Media Backup (Rel. Jan. 23) running on your BlackBerry, the photos, videos, and voice notes you take with your smartphone can be automatically sent via Wi-Fi to your PC.



**Pocket 10B SE
Business Calculator**
\$6.99 • 109KB

If you'd like a powerful business calculator without having to carry around an extra device, try the Pocket 10B SE Business Calculator (Rel. Oct. 17, 2009) from Lygea Calculators.



Upvise
Free • 218KB

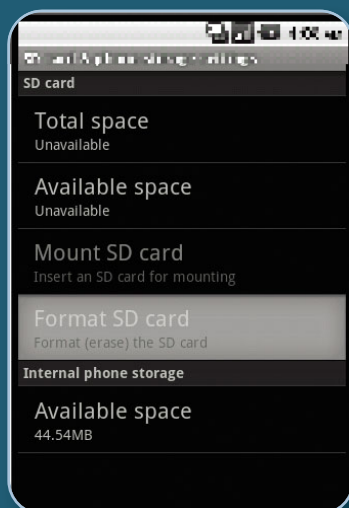
The Upvise app (Rel. Oct. 23, 2009) from Unyverse is just the mobile piece of a cloud computing platform designed for small businesses. Upvise is particularly well-suited for sales and contact management but does much more.

SMARTPHONE Tips

Make Your
Do-Everything
Device Do More

by Andrew Leibman

Formatting
your SD
cards is
easy, even
from your
Android
phone.



■ Android

FORMAT MICROSD CARDS

Once you realize how well your Android-based device handles media, it's usually just a matter of time before you overload the internal memory with music, videos, and more. To get some much-needed spare storage, install a microSD card. You may need to consult your phone's instruction manual to determine where the memory card goes, but you'll need to format the card before you can start using it. To format a microSD card you have installed, press the Menu key while on the Home screen, tap Settings, and then tap SD Card & Phone Storage. In the resulting menu, you'll need to make sure your SD card is unmounted before you can format it. If it is mounted, tap Unmount SD Card and then tap Format SD Card. If the SD card was already unmounted, just tap Format SD Card and confirm when you see the warning.

ADD & CONNECT TO A VPN

A VPN (Virtual Private Network) is one of the more secure avenues for accessing data from a corporate or other institution's network, and your Android-based device can get you in quickly and easily. (Note that you'll need the permission of your network administrator to access the VPN from your phone, and said admin will also need to provide you with configuring the specifics of the VPN.) To create a VPN connection, press the Menu key while at the Home screen, tap Settings, Wireless & Networks, VPN settings, and Add VPN. Select the type of VPN you want to add, and then

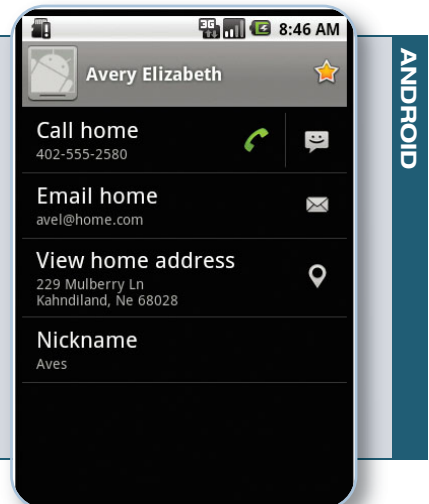
and content that is delivered to your phone while it is locked. Decryption occurs when you access the content. To enable encryption, start by making sure you have a device password enabled; this will prompt you for your password every time you turn the device on and wake it from standby. Incidentally, if you skip this portion and attempt to enable Encryption, the device will prompt you to create a password anyway. Following this tutorial will give you a little more control over the aspects of your mobile experience that are protected.

To set up the password, press the Menu key; scroll to and select Settings, Options,

ADD CONTACT TO FAVORITES

It's likely that not all of your contacts are equally important to you, but Android lets you maintain a list of contacts that you message frequently as Favorites. To add a contact to your Favorites, launch the Phone utility, tap the Contacts tab, tap the contact you want to designate as a favorite, and then tap the star icon to the right of the contact name. This will turn the star gold.

Now to access your favorites, launch the Contacts utility, tap the Favorites tab, and then select the person with whom you wish to communicate. If you find that you need to cull some names from your Favorites list, then launch Contacts, tap the Favorites tab, tap the gold star so that it turns gray again, and then press the Home key to return to the Home screen with one fewer contact cluttering up your Favorites.



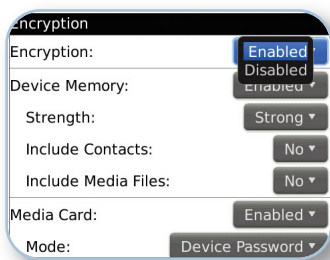
input the details from your network administrator, such as the VPN Name, Set VPN Server, DNS Search Domains, and then enable or disable Encryption. Press the Menu key and then tap Save.

To connect to your newly created VPN, press the Home button (if you're not already on the Home screen); press Menu; tap Settings, Wireless & Networks, VPN settings, and the name of the VPN you created to connect to it. When prompted, input the required credentials and tap Connect. When you're finished using the VPN, close the connection by dragging the Notifications panel from the top of the screen and tap the VPN connection notification.

BlackBerry

ENCRYPT YOUR BLACKBERRY

For an additional layer of security, you can configure your BlackBerry to encrypt stored content



Encrypting your BlackBerry can shield your data from potential data thieves.

Password; and then change the Password setting from Disabled to Enabled. Select Set Password, input a password (you cannot use a sequence), and then verify your new password to complete the setup. From this menu, you can adjust the number of password attempts the phone will accept before locking (reduce this number at your own risk; your data will become inaccessible if you fail to enter the password correctly within the allotted number of attempts); change the amount of time that passes before the phone automatically locks; and select whether or not to prompt when installing applications, allow outgoing calls while locked, or lock automatically when holstered. Press the Escape key four times to return to the Home screen.

To turn on encryption, press the Menu key; scroll to and select Settings, Options, Security Options, Encryption; and then change the setting from Disabled to Enabled. Press the Menu key, select Save, enter your device password, and press the trackpad to finish. From the Encryption menu, you can also disable/enable encryption on the device memory, include contacts or media, and use the Strength setting to set the encryption to Strong, Stronger, or Strongest. If you opt to encrypt your contacts, any call you receive while the device is locked will simply show up

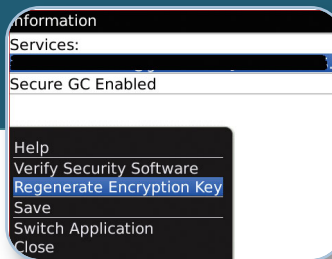
It's a good idea to maintain your list of favorite contacts so you can access them quickly.

as Incoming Call. You should also be aware that encryption can be a resource-intensive process, which could impact the performance of your device and shorten its battery life.

When your BlackBerry's encryption feature is enabled, here is a list of things that are encrypted: all AutoText suggestions content that Web sites or third-party applications push to your BlackBerry; Web sites that you save to your BlackBerry device; the browser cache; and calendar entries including subject, location, meeting organizer, meeting participants, and notes. If you chose to encrypt your contacts, then everything but the contact's title and category are encrypted. Other items that are encrypted include message list items, subjects, email addresses, each message body, attachments, memo list items, titles, and data in the body of your notes.

STAY SAFE: RENEW YOUR ENCRYPTION KEYS

If you use your BlackBerry to access an email account via the BES (BlackBerry Enterprise Server) or BDR (BlackBerry Desktop Redirector), then your emails are only as secure as your encryption keys. To make sure you're getting the most out of your security scheme, renew your encryption keys at least every two weeks. To renew your encryption key on your BlackBerry, press the Menu key; scroll to and select Settings, Options, Security Options, Information; highlight the service for which you want to generate a new key; press the Menu key; and then select Regenerate Encryption Key. Press the Escape key repeatedly to return to the Home screen.



Regenerate your encryption keys regularly to maintain your security.

simply double-tap the Shift key (it will turn blue when in Caps Lock mode) and you're ready to holler in text

form. Please use sparingly.

Symbian

S60 SHORTCUTS

Smartphones are all about convenience, but if there's a way to make these pocket powerhouses even more convenient, then we're all about it. Using shortcuts is one way to trim the time you spend navigating menus and searching for settings. Here are a handful of the most useful shortcuts available for S60-based devices.

To kill an application from the Home screen, press and hold the Home key (or the Menu key on devices without a dedicated Home key) to display the task list, which displays icons for every application you're running. Use the scroll key to highlight the applica-

tion process you want to kill, and then press the Backspace key. When prompted to confirm the operation, select Yes by pressing the corresponding soft key.

Quickly view your call log by pressing the Call key. The Call key can also be used to send messages from within the Messaging application. When you're finished composing a message, just press the Call key to send the message.

Check your voice messages quickly by pressing and holding the 1 key. The phone will automatically launch the dialer and let you check your voicemail messages.

iPhone

COPY & PASTE EVEN MORE

The iPhone earned some early ridicule for not sporting a copy-and-paste feature right out of the gate, but that was added later. As you're probably aware, double-tapping a word while editing a document displays the Cut Copy Paste dialog. If you tap a word in a paragraph four times in quick succession, then the iPhone highlights the whole text block and gives you the same Cut Copy Paste dialog. You can use this feature in apps that allow you to edit text, but it won't work with uneditable text, such as on Web sites viewed in Safari and in ebooks and PDFs.

ENABLE CAPS LOCK

You may not find occasion to use Caps Lock with your iPhone very often, but the option is there if you want to enable it. Just tap Settings, General, Keyboard; and then slide the switch adjacent to Enable Caps Lock from Off to On. Press the Home button to exit the menu. When typing using the keypad,



Your iPhone can even copy and paste whole paragraphs.



Enabling Caps Lock lets you double-tap the Shift key to type in all caps.

You can quickly begin browsing the Web by pressing and holding the 0 (zero) key. Performing this shortcut launches the default Web browser.

Pressing and holding the Calendar key will launch the Calendar application and open a new Meeting form, which lets you quickly schedule meetings.

Nokia phones that have a Media key will launch the Music player application when you press and hold this key.

To hear your incoming text messages read aloud, just press and hold the left selection key (also known as the Menu soft key). This launches the text-to-speech Message Reader application, which proceeds to read your messages.

■ WebOS

RECOVER YOUR PALM PROFILE

As a proud Pixi or Pre owner, you know that your Palm Profile is how you get access to automatic updates, automatic backups, credit card data, and more. But if you forget any part of your Palm Profile credentials, such as the email address you used to set it up, your password, or the answer to an optional security question, then you could be restricted from accessing these useful services and important bits of data.

If you forgot the email address you used to set up your Palm Profile, then there is an easy way to retrieve it. Tap the Launcher, flip to the Backup app and tap to launch it, tap the Preferences menu from the upper-left corner of the screen, tap Palm Profile, input your Palm Profile password, and then tap Done. Your Palm Profile email address will appear.

If you forgot your email address and your password, then you'll need to contact your wireless carrier to sort that out.

If you happen to forget your password, but you know the answer to your security question, then simply tap the Launcher, navigate to the Backup app and tap to launch it, tap the Preferences menu from the upper-left corner of the screen, tap Palm Profile, and then input the incorrect password three times in a row. Next, you'll be prompted to answer your security question. Answer it correctly and create a new password.

If you fail to recall the answer to your security question and your password, then input both items incorrectly three times to prompt Palm to send you a security information reset email. Access the email and click the included link to load a password reset

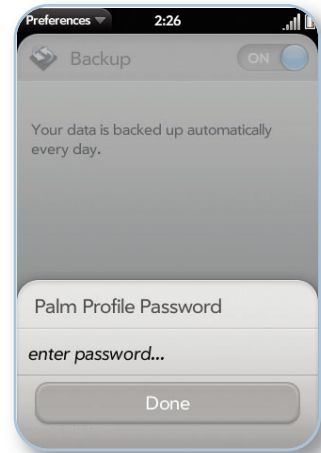
Web page. Note, if you receive multiple security information reset emails, only click the link in the most recent one. On the Web page, input a new password, confirm it, select the option to change your security question and answer it (choose a question and answer that are easy to remember), and then select the Password Reset option. You should receive an email shortly confirming your new Palm Profile credentials.

If you never set up a security question (it is optional) and you can't remember your password, then you'll need to visit www.palm.com/palmprofile using your desktop or notebook browser, and then click the Forgot Password link. Input the email address associated with your Palm Profile, and then click Next. You will receive an email instructing you to reset your security information. Click on the link in the email, input a new password in the resulting Web site form, confirm your new password, click the Change Security Question link, choose a question from the list, input your answer, and then click Reset Password. You will receive a confirmation email when your new credentials are enabled.

■ Windows Mobile

QUICKLY ENABLE SPEAKERPHONE

While Windows Mobile phones support a range of hardware configurations and may have dedicated speakerphone buttons, one of the easiest ways to enable and disable the feature while on a call is to press and hold the Talk button. Press and hold the Talk button again to turn off speakerphone. ▲



Your Palm Profile is important; try not to lose it.

USING GESTURES IN MESSAGING

Despite Windows Mobile's Windows-like appearance, touchscreen-based WM phones support plenty of gesture tricks to help you more quickly navigate menus. The Messaging application inbox (found by clicking Start, Programs, and Messaging), lets you swipe your finger to the right or left across the middle of the screen to alternately view Messaging and Outlook email inboxes. Non-touchscreen phones can also quickly jump between the two inboxes using the left and right buttons on the D-Pad.

One of the soft keyboards of touchscreen-based WM phones also supports gestures to help make stylus typing a

more fluid endeavor. When in an application that supports text input, use the stylus to tap the keyboard icon at the bottom of the screen to display the soft keyboard (if it is not already displayed). Then tap the Up arrow beside the soft keyboard icon to view the various soft keyboard types. The one you want to enable is called simply Keyboard. (Note that this keyboard features very small keys, so using a stylus to type with it is compulsory.) Now, while typing with this keyboard, you can swipe to the right with your stylus to add a space, swipe to the left to backspace, swipe down to begin a new paragraph, or swipe up from any letter key to capitalize that letter.

Audio & Video

by Blaine Flamig

Notes

BMI MAKES SHIFT TO MOBILE ACCESS

■ Del Bryant, president and CEO of BMI, the U.S. music organization that collects licensing fees on behalf of more than 400,000 songwriters, composers, and music publishers, claims his organization was the first in the music industry to launch a Web site way back in 1994. Thus, the organization's recent

announcement that it has launched a mobile version (www.bmi.com) of its site for Android, iPhone, Palm, Symbian, and upcoming BlackBerry 6.0 devices isn't all that surprising, although it should prove useful for clients accessing their account information from the mobile version of its Online Services section. "We understood the power of the Internet then, and we understand how quickly everything is transitioning to a mobile environment today," Bryant stated recently. To that end, BMI plans to continue developing mobile apps that business owners who license music can tap into. "We know that business information needs to be available at anytime, anywhere, in a secure and portable mode," Bryant says.

BELKIN LIGHTS UP YOUR READER

■ Sticking with the Kindle-protection theme, Belkin (www.belkin.com) recently released new Cap (\$19.99), Vue (\$34.99), Pleat (\$34.99), and Grip (\$29.99) sleeves for Amazon's ebook reader, with all the models available in various colors. Although the Pleat expands to provide room to also store a smartphone, digicam, power supply, or other devices, the Vue adds an expandable pocket to do the same. Further, for those times when you break the Kindle out at night to do some reading,

MOLESKINE GIVES THE KINDLE THE NOTEBOOK TREATMENT

■ Chances are you have toted around a Moleskine (www.moleskine.com) notebook at some point to jot down various notes, journal entries, sketches, business ideas, diary entries, travel itineraries, and more. With the company's new

cover for the Amazon Kindle, however, the past meets with the present. Described as an "analog-digital hybrid tool," the cover's exterior has the same rounded corners, elastic band, and black cover Moleskine notebooks sport, while the interior has suede lining to protect the Kindle and four double-stitched elastic bands to hold it in place. On the left, Moleskine also includes an area to hold a reporter-style notebook pad (two pads included) to scribble the old-fashioned way. Covers for the 6-inch Kindle are \$39.99, while covers for the 9.7-inch Kindle DX run \$59.99.



ETON GETS SOULFUL

■ At its most basic, Eton's new Soulra (\$200; www.etoncorp.com) is nothing more than a portable speaker system with integrated iPhone/iPod dock that outputs stereo sound. The basics, however, only tell a small portion of the Soulra's complete story. Beyond donning a rugged aluminum and rubber exterior that Eton claims makes the Soulra "IPX-4 slash-proof from all angles," the Soulra also packs a high-efficiency monocrystal solar panel with "superior low-light response" that funnels power to the speaker's built-in Li-Ion battery. Thus, whether you're poolside or landing a swordfish in the Atlantic, the Soulra can keep the tunes coming without succumbing to water damage. Recharging the battery via the solar panel takes roughly 10 hours (depending on sunlight conditions), while recharging using the speaker's AC power input takes four hours. A battery indicator is included, as is audio-line input to attach non-Apple devices. Speaker power is rated at 11W total output, and bass boost ability is included.



Belkin now has an attachable eBook Light (\$24.99) to assist your vision. In addition to an integrated clamp and foldable design, the eBook Light also provides two brightness choices and an adjustable arm.

GET BHEESTIE AGAINST MOISTURE

■ Speaking of water, if you live in an area where your handheld devices are exposed to an overabundance of moisture or you accidentally submerge a device in water, consider dropping the waterlogged electronic in a Bheestie Bag (\$20 per 6- x 9-inch bag; www.bheestie.com) to get "the wet out." Created by two sisters raised in Oregon, the Bheestie Bag essentially amounts to a clear ziplocked bag containing liquid-absorbing beads. Though the company states a Bheestie can't save LCD screens or phones that have shorted out, the bag is designed to remove moisture that devices accumulate daily (think sweat, saliva, etc.) and has "also done some amazing saves of wet cell phones, iPods, etc." Further, the company says "if you

follow the directions for Bheestie, we have a near 100% success rate." Depending on usage, one Bheestie Bag should last about a year.

ON-THE-GO WITH GENIUS

■ No, that wasn't a flying saucer that just landed on your desk next to your notebook; its Genius' SP-i150 (\$24.90; www.geniusnetusa.com) portable speaker. Suitable for laptops, MP3 players, netbooks, CD players, and other devices that have a 3.5mm audio jack, the SP-i150 is available in black or white colors and houses a 1.25-inch metal driver that outputs audio in a 360-degree field to deliver "louder sound" that's "far better" than a notebook's speaker, Genius claims. An internal Li-Ion battery offers eight hours of playback and recharges via a USB port. Elsewhere, Genius' SP-i160 (\$29.90) shares many of the SP-i150's traits, including the built-in battery, 1.25-inch metal driver, and USB port charging. The SP-i160, however, forgoes the flying saucer shape in favor of a body that expands to create "sound broader than speakers on a notebook." It also provides a minijack converter to connect devices with a 2.5mm jack. Both speakers ship with a carrying pouch and USB charging cable. ▲



IPHONE CONTROL OF THE REMOTE VARIETY

■ If you love your home theater equipment as much as your iPhone, you're in for a treat with the iGi i-Got-Control (\$69.95; www.i-got-it.com) and L5 Remote (\$49.95; www.l5remote.com) from L5 Technology. Both are accessory adapters that turn the iPhone, iPod touch, and iPad into a universal remote capable of controlling IR-based televisions, cable boxes, DVRs, and other equipment. Although each requires downloading an accompanying free app from the App Store that provides similar abilities, notable differences do exist. The i-Got-Control, for example, includes a database of more than 40,000 codes, meaning there's no "learning" process necessary for the adapter to obtain the original remote's functionality. If the i-Got-Control doesn't contain the code you're after, however, a Learning Mode is available to add control. The L5, meanwhile, relies on "learning," which involves pointing the original remote at the adapter while engaging a button, but it also allows for designing custom remote designs by dragging and dropping buttons you want within the app. Both adapters enable controlling electronics from as far away as 30 feet with the iPhone, support creating macros to execute a sequence of commands, and don't require a Wi-Fi or 3G connection to operate.



by Tessa Warner Breneman

Portable NAVIGATION DEVICES

Find One That Fits Your Lifestyle

When the weekend comes around, it's time to drop the briefcase and pick up your tennis shoes, bike, hiking gear, or golf clubs and get some fresh air. When your favorite outdoor activities are coupled with a PND (portable navigation device), you'll be able to go to more places and keep better track of where you've been. Handheld mapping PNDs have a wide range of capabilities suited for a variety of uses, but other types of PNDs are designed for more specific activities, including fitness and sports (such as golf). You can even get walking directions to spots around your hotel when you're on the road. Whether you want to improve your golf game or find better restaurants within walking distance from your hotels, read on to find out if a PND will benefit you.

Out & About With A Handheld PND

The handheld mapping PNDs at the low end of the price scale (\$100 to \$200) generally have small grayscale or low-resolution color screens but offer waterproof exteriors and a high-sensitivity receiver that can grab an accurate satellite signal

through thick trees or clouds. Few of these devices offer built-in memory or support for an external memory card, however.

Although many won't contain preloaded maps and others also won't offer the ability to add maps, these handheld GPS devices will usually come with a base map, which is a basic set of trails, highways, and travel information, for major cities. Low-end handhelds without a set of maps will use satellite coordinates and a combination of waypoints (or reference points), routes, and your track log to help guide you to and from your destinations.

With mid-priced PNDs (\$200 to \$350), you'll start to see larger, more detailed screens. Plus, you'll be able to find PNDs with base maps and the ability to add maps to internal memory or from a memory card. These maps could be topographic (with terrain and elevation information), could include local biking and hiking trails, or could be straightforward city maps. City maps supported by some devices provide automatic routing and pedestrian or driving directions for your hometown or a city you're visiting.



▲ The Garmin Oregon 550 (\$499.99; www.garmin.com) has a large touchscreen with a built-in camera that offers geo-tagging for photos.

It's not uncommon to find features such as an electric compass and a barometric altimeter on mid-priced PNDs. An electric compass that can compensate for tilts is handy because you can't always be holding the device level with the ground. If you often hike or bike in mountainous areas, the barometric altimeter will keep you informed of your elevation and alert you to any changing weather conditions.

As the price of PNDs increases, the devices are able to save more waypoints, routes, and tracks. Plus, you can start gaining access to POIs (points of interest), including gas stations, hotels, restaurants, and coffee shops. Some devices let you create your own custom POIs, which is handy for being able to find your way back to good camping spots or rest stops on your favorite trails.



▲ The Magellan Triton 2000 (\$399.99; www.magellangps.com) offers a touchscreen, camera, voice recorder, and flashlight.



▲ The Edge 500 from Garmin (\$249.99; www.garmin.com) clips on your bike and uses satellite information to determine your distance, speed, location, and elevation.

Some mid- to high-end PNDs (\$350 and up) have additional features for both practical purposes and fun. PNDs with touchscreens are helpful because the majority of the real estate on the device can go to displaying maps, rather than hardware buttons. When you need to travel light, look for a PND with features such as a built-in flashlight, voice recorder, or camera. A voice recorder will let you record notes about particular destinations when a pad and pencil aren't practical to use, and a built-in camera will help capture all the amazing sights along your journey. If you happen to branch off from others on your expedition, a GPS device with a two-way radio will let you call for help in case of an emergency or to summon them to a scenic spot.

If you are interested in swapping destinations with others, some PNDs let you post places you've been, favorite routes, and other data through online communities and applications. Then you can see where others have gone and find spots that aren't widely known.

Get Fit With GPS

Keeping track of information such as distance and time while you work out is easier with a GPS unit designed with fitness in mind. Unlike handheld devices, fitness-oriented GPS units come in the form of wrist watches or clip-on accessories (say, for your bike).

A fitness GPS generally won't have a basemap or the ability to add maps, but some will let you save routes and waypoints and include a high-sensitivity receiver. Instead of mapping features, fitness GPS devices monitor your heart rate and track your distance, speed, time, and calories burned. Some devices are also compatible with pedometers for runners and walkers or a cadence sensor for bikers.

Many makers of fitness GPS units offer features and additional programs to help you set goals, create a schedule of workouts and activities, track your progress, and share information with others. You can find basic fitness watches for around \$100 and advanced gadgets that can easily cost more than \$350.

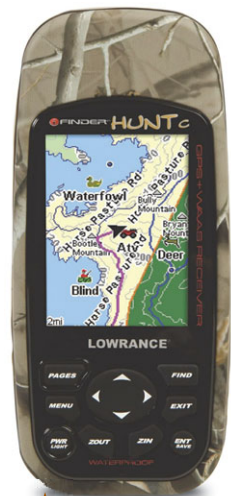
Get In The Games

Whether you prefer to head for the golf course or a favorite hunting ground, you can often find a GPS device specifically suited for your favorite pastime. PNDs designed for hunting, for example, offer many of the same features handheld PNDs provide, such as an electronic compass and a barometric altimeter, but also include unique features designed to mark tree stands and area perimeters (often called "scout mode").

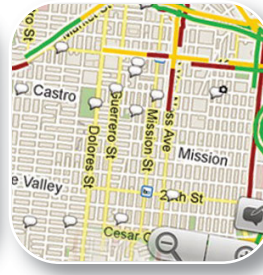
Devices engineered for golfing generally come preloaded with thousands of courses from all over the United States, and some even have the ability to add your favorite local courses. They provide information, such as your drive distances, targets, remaining yardage to the green, and the distance to and location of hazards. You can also keep track of your score digitally or preview courses to decide if it's the best place to take a new client. Like many handheld GPSes, these devices generally have a high-sensitivity receiver and waterproof exterior. Handheld golfing PNDs start around \$250 and can climb to \$400 or more.

PNDs For All

If fresh air and sunshine are always on your weekend agenda or if you often find yourself getting lost in the city, a PND might be a great investment for you. PNDs can offer a variety of features not found on other types of GPS devices, or they can be a hybrid device to meet all your traveling GPS needs. So next time you head outdoors, consider whether a PND can help you find your way. ▲



▲ Although now a legacy product, the iFinder Hunt C from Lowrance (\$399; www.lowrance.com) is one of the only PNDs designed just for hunting and is still available from some vendors.



by William Van Winkle

The Buzz On Buzz

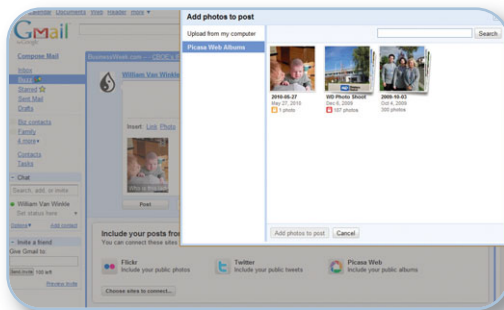
This Google Tool Wants To Improve Your Social Life

With Facebook, LinkedIn, Twitter, and the handful of other big social networking sites already firmly entrenched, is there a need for one more service on your roster? Google hopes so. Let's see if the company's Buzz (buzz.google.com) has a place in your application hive.

Buzz Basics

Buzz seeks to bridge Gmail, Maps, Picasa, and other services into a seamless whole. When you're in Gmail and click the Buzz link (below Inbox), you'll see a very Facebook-like box wherein you can type a post of any length. Clicking Link lets you paste in the URL of a page you want to share, and if there are multiple images on the page, Buzz helps you choose how many of these images to include in the post. (Our results with this feature were spotty, but any more than one image beats Facebook.) Clicking Photo lets you batch select pictures

You can include photos in your posts whether the photos are from an associated service (such as Flickr or Picasa) or from your hard drive.



from your system or dive into associated online photo collections, such as those from your Flickr or Picasa accounts.

Buzz can display photos inline as a slideshow. Connect Buzz to YouTube and followers can view linked videos inline, too. Better yet, slideshows and videos pop up at full browser size, eliminating the need to jump to another site when you want to see more than a thumbnail. When ready to post, you can set the message and content as public or

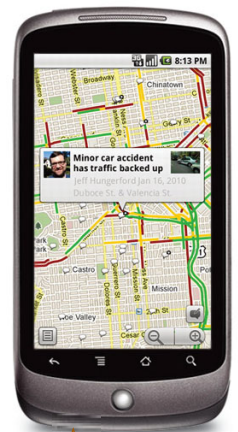
private. If private, you can select which of your Gmail groups will have access and even create and edit groups on the fly. This is a *great* feature for businesses that want to message select groups.

Mobile Buzz

If you don't try the mobile version of Buzz (www.google.com/mobile/buzz), you're missing the best part of Google's show. In Following view, the service feels much like mobile Facebook. But the beauty of mobile Buzz lies in Buzz's harnessing of geotagging and Google Maps. The Nearby view reveals public posts of other Buzz users around you. Switch to the Buzz map or enable the Buzz layer in mobile Maps and you'll see little Buzz bubbles at other users' locations. Imagine being able to query strangers about the driving conditions they're in before you choose a freeway.

You can also read other people's Buzz feedback about places you'd like to visit. One of our favorite features is the ability to use Google's speech-to-text capabilities in Buzz posting. If you open the Google Mobile app and say, "Post buzz, I'm in Sally's Diner," the Buzz application will start a post with the text "I'm in Sally's Diner," including the option to add your location so others can map you. All you have to do is hit the Post button.

You can link Twitter with Buzz, but Buzz does not yet integrate with Facebook or LinkedIn. Buzz has many feature advantages over Facebook, but are they enough to make Facebook users switch? Not yet. However, Google could easily become a better tool than Facebook for businesses that need to track mobile workers and help them collaborate. ▲



With the mobile version of Buzz, you can find useful traffic and navigation information.

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Unexpected things happen when you're traveling. You lose the ability to access the corporate network.

A customer sends you an important file, but you can't open it. You need some quick help creating a formula in Excel. Your smartphone crashes. Batteries die. Credit cards get stolen or lost. If these or other urgent situations happen to you when you're on the road, our Business Travel 911 articles can help.

Business Travel 911 articles are available to anyone with Internet access, even if you don't subscribe to *PC Today* magazine. Simply point a browser to www.pctoday.com and click the Business Travel 911 link on the left for a complete menu of helpful articles.

Business Travel 911 articles, including online versions of those printed on the following pages, are updated regularly. For articles that help you when you can't access the Internet, we suggest you print and take them with you when traveling. If you're a subscriber and you logged in on the home page, you can use the Print This link at the top of any article for a printer-friendly version.

While you are visiting the site, also check out the links under Services. There you will find an abundance of domestic and international travel resources,

including airline, airport, hotel, and vehicle rental information.

GET MORE ANSWERS

PCToday.com also offers numerous resources designed to make life easier for business travelers. Scroll down a little on the home page to find our Wi-Fi Hotspot Locator, powered by JiWire. Or check out the Search For Flights, Hotels & Rental Cars box to start making your travel plans. And the Services menu on the left side of the home page offers links to Web sites and phone numbers for airlines, airports, hotel chains, and more.

The screenshot displays the PCToday.com website interface. At the top, there's a navigation bar with 'Log In', 'Forgot Your Password?', and 'The Magazine' section. The 'The Magazine' section includes links for 'Current Issue', 'Search All Articles', 'Tech Support Center', 'Next Month's Articles Online Now', 'My Personal Library', 'Media Kit', and 'Talk With An Advertising Rep'. Below this is the 'Discussion Forums' section with links for 'Computing Chat Rooms', 'Q & A Board', and 'Services'. The 'Services' section includes 'Technology Guides' and 'Destination Guides'. The main content area is titled 'PCToday.com Daily' and 'Monday, June 21, 2010'. It features a 'GET PCTODAY' banner, a 'Daily Tip' section with links for 'Office Tip: Work In Progress', 'Travel Tip: Don't Forget The Soap', 'Mobile Tip: Clear BlackBerry Cache', 'Destination: Edinburgh', and 'Fun Site: Red Envelope'. There's also a 'Next Month's Articles' section with links for 'Office Tip Archive', 'Mobile Tip Archive', and 'Travel Tip Archive'. A 'FREE Daily email' sign-up link is present. Below the main content area is the 'PCToday.com Web Log' section. The bottom section is titled 'Business Travel 911' and lists various emergency topics: 'Emergencies' (Lost Or Stolen Credit Cards, Lost Wallet Or Purse, Prevent Identity Theft), 'Equipment Problems' (Cope With A Failed Navigation System, Can't Find, Dead Batteries, Deal With A Crashed PDA Or Smartphone, Deal With A Malware-Infected Notebook, Modern Problems, Revive A Crashed Notebook, Solve Network Connection Problems, Solve Notebook-Projector Setup Problems, Solve Notebook-Projector Setup Problems), 'Health' (Jet Lag & Other Sleep Difficulties, Motion Sickness, Travel & Your Health), 'Remote Connections' (Connect To An Encrypted Wireless Network, No Hotspots? Time To Dial Up, Solve Network Connection Problems, Solve Wireless Internet Connection Problems, Use Wi-Fi Hotspots Wisely, Use Your Cell Phone As A Modem), 'Software Problems' (Attachment Issues, Can't Open A PDF File, Can't Open A PowerPoint File, Deal With A Malware-Infected Notebook, Excel In A Crunch, Open That Compressed File, Open That Compressed File, Password Management, PowerPoint In A Pinch), and 'Travel' (Airline Reservation Status, Getting Bumped, Gratuity Guidelines, Lost Luggage, Lost Passport, Lost Traveler's Checks, Misplaced Luggage, Rental Car Wreckage, The Traveler's 911 Directory, The Traveler's 911 Directory, The Traveler's 911 Directory).

Need Help Right Now?

If you don't find the help you need in the Business Travel 911 department in this issue or on PCToday.com, visit our online Tech Support Center at www.pctoday.com/techsupport.

Search Or Browse

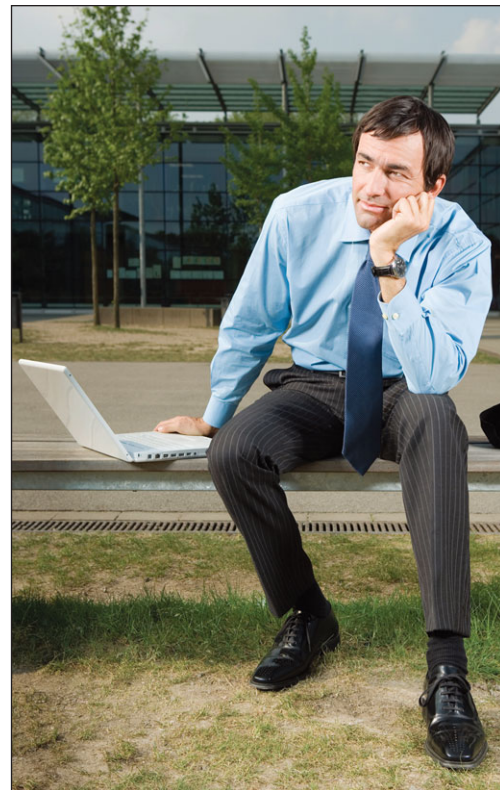
You can look for answers first by entering a search term in the search box toward the top of the page and clicking the Search button. You can also browse the list of Top Subjects to find answers to common problems or click the link under Solutions Knowledgebase to browse a list of common problems and frequently asked questions.

Fight Error Messages & Bugs

Click the appropriate link under Error Messages to find out what a particular message means. Or scroll down to Security & Privacy to learn how to tackle malicious software (such as viruses and worms), spyware, and spam.

Learn More

At the Tech Support Center, you'll also find links to troubleshooting articles on a variety of topics. Browse the headings on the main page to find a wealth of additional information, such as advice on setting up a wireless network and installing just about anything.





Exclusive Phone Number For *PC Today* Readers

If you don't find what you're looking for on *PC Today's* online Tech Support Center, dial **(800) 414-3491** for assistance. Representatives are available from 8 a.m. to 8 p.m. CST Monday through Friday to take your call. You may also click the Email Us link under the heading "Still Can't Find A Solution?" at www.pctoday.com/techsupport.

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The screenshot shows the PC Today Tech Support Center website. At the top, there's a navigation bar with links like 'Home | Tech Support | Article Search | Subscribe & Shop | Log Out'. Below this is a search bar and a list of 'Top Subjects' including Red X, Safe Mode, Hard Drive, Startup Menu, and Outlook Express. The main content area is divided into sections: 'Error Messages', 'Basic Troubleshooting Articles', 'Solutions Knowledgebase', and 'Basic Troubleshooting Articles'. There are also links for 'Error Messages', 'Basic Troubleshooting Articles', 'Solutions Knowledgebase', and 'Basic Troubleshooting Articles'. The right sidebar contains a 'Tech Support Center' menu with links to 'Error Messages', 'Solutions Knowledgebase', 'Basic Troubleshooting Articles', 'Security & Privacy', 'How To Get Rid Of', 'Backups & Data Recovery', 'Preventive & Regular Maintenance', 'Networking & Communications', 'Articles On How To Install ... Just About Anything', 'Driver Education', and 'Other Helpful Tech Support Tools'. At the bottom, there's a section for 'Can't Find An Answer To Your Question Or Problem?' with a link to 'Post it to our reader response Q&A Board'.



Solve Remote Network Connection Problems

Resolving remote network issues often goes beyond common fixes you may have used to fix your Internet connection. Fortunately, you can quickly eliminate a number of possibilities using a CLI (command-line interface; a text-based command window that is a holdover from the early days of computing), which is still available in Windows XP/Vista/7.

All these suggestions assume that the network is up and operating. It also assumes you are connected to the Internet. If you are having trouble acquiring or maintaining a connection to the Internet, you can visit the Business Travel 911 section on our Web site for possible fixes. Some of these suggestions may help you solve remote network connection problems.

Before you proceed, you'll need to know how to open the CLI window. In WinXP, click Start, select Run, type **CMD** in the Open field, and press ENTER. In Vista/Win7, click the Start button and type **CMD** into the Start Search field, and then click the **CMD** icon that appears in the results.

may have used this number to access a network login. This can also be a Web address (called a host name) or DNS name to access a login. IP addresses and DNS names are interchangeable. With either, a ping command can determine whether the computer and network can exchange basic data.

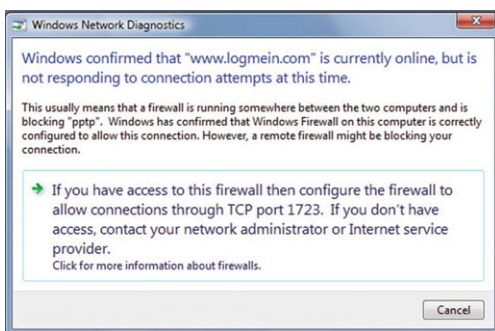
From the command line window, type **ping** followed by a space and the IP address or DNS name (examples would be **ping 167.154.16.27** or **ping www.corporatenetwork.com**). Press ENTER. If you see a time-out message, wait a few seconds. A time-out alert appears if the reply takes longer than a second.

If the response indicates the data packets were sent and received, your machine is exchanging data with the network address. You can skip to "Get Connected" to set up a dedicated connection and edit settings. If you have been accessing the site via a Web address, go to "Look It Up" before heading to "Get Connected."

If you receive a response that contains something about a nonexistent domain, you are likely using the wrong IP address or DNS name to log in. Double-check the address and try to connect normally. (If you are logging in with an IP address, skip to "Look It Up" for a quick way to check its validity.)

If you receive a transmission error, the ping data is not leaving your PC. Your firewall is likely blocking you from accessing the network. You'll want to add the site to your firewall as an allowed exception (refer to your firewall's help documentation for instructions) and try again.

If you receive a response after an excessive number of time-outs, the network's response to



Setting up a dedicated VPN connection in Windows can provide added troubleshooting assistance.

Ping It

All Internet or network hosts, computers, routers, and other Internet-enabled devices use an IP address (a string of four groups of numbers separated by periods, such as 233.122.0.2) to uniquely identify themselves. You

your connection may be slow and your browser or other network access utility may be giving up before it connects. Lengthen the response time by adding a -t switch (ping -t followed by the IP address or DNS name). This will ping the address indefinitely. After a dozen pings, press CTRL-Break to view the packet data. If there is no response yet, continue awhile longer, and then press CTRL-C. If you never get a response or the number of pings to get a response is considerable, skip to "Trace the Route" for assistance.

If you get a message saying the ping request could not find the host or the response indicates the number of data packets sent is zero, the network is not acknowledging your ping. Changes to the network or configuration may now be preventing access. Contact the network administrator for further assistance.

Look It Up

You can look up a DNS name from an IP address and vice versa. From the command line window, type **nslookup** followed by a space and either the DNS name or the IP address and press ENTER.

Write down the DNS name and numeric sequence you see in the lines that begin with Name: and Address: (ignore aliases). If you are checking an IP address, the DNS name should help confirm it. If you recognize nothing, contact the network administrator to confirm the IP address.

If you are using a DNS name, Windows may be having a problem with DNS name resolution (translating the DNS name into an IP address). Perform two pings from the same command line window, first using the DNS name you wrote down and then using the IP address. Compare the access times and packets you sent and received. If there is a big difference in behaviors pinging the DNS name vs. the IP address, skip to “Get Connected.”

Trace The Route

Tracing the path data packets take going to the network will help pinpoint problems. From the command line window, type **tracert** followed by a space and the DNS name or IP address, and press ENTER. Lines will appear with access times and IP addresses. The final few hops should show domain names—the last one being your network. This is the route—and the time the trip is taking—between nodes on the Internet.

If an early hop takes a long time or causes the trace to hang (a flood of time-outs), contact your ISP. If you reach many hops before things go awry, the problem may be with a gateway or router at or near the location of the remote network. Check with the network administrator for assistance.

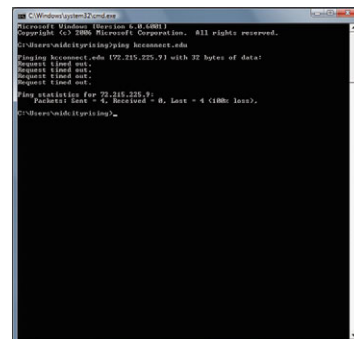
Get Connected

Setting up a direct VPN connection gives you a dedicated login interface and lets you avert DNS issues. To set up the connection in WinXP, select Control Panel on the Start menu. Click Network And Internet Connections and then select Create A Connection To The Network At Your Workplace. In Vista/Win7, click Control Panel on the Start menu and click Network And Internet (in Category view), then Network And Sharing Center. Click Set Up A Connection Or Network (Vista) or Set Up A New Connection Or Network under Change Your Network Settings (Win7). Select Connect To A Workplace, then Use My Internet Connection. (Vista/Win7 offers smart card as a connection option. We won't discuss that here.)

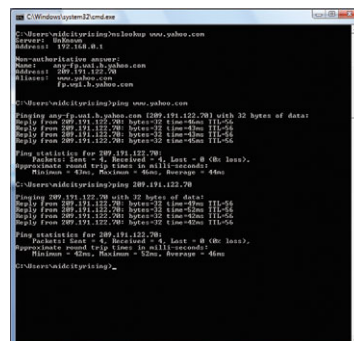
Select Virtual Private Network Connection, name the connection, and provide the host (DNS) name or IP address. If you are asked if you would like to dial a connection, click No (unless you only have dial-up Internet) and click Finish (WinXP) or Connect (Vista/Win7). The OS will attempt to connect you without configuring any settings. If this solution does not work, or if you are using WinXP, proceed with the following instructions.

Return to the Network Connections window in WinXP or the Network and Sharing Center in Vista/Win7 and click the option to manage network connections. Right-click your VPN network icon and select Properties. Next, click the Networking tab, click Internet Protocol (in Vista/Win7, you'll need to do this for TCP/IP V4 and TCP/IP V6), and click Properties. Override automatic configuration and provide the exact IP address and DNS names for the network. Exit the Properties interface, right-click the VPN icon, and click Connect. Provide your login information if prompted.

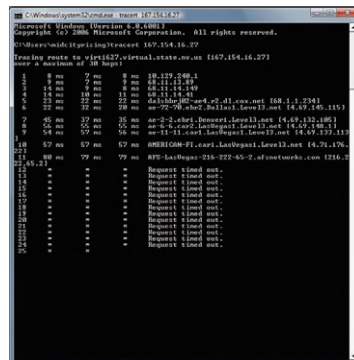
If you cannot connect, Windows can provide some assistance, but you may need more advanced configuration information. Contact the network administrator for detailed information. ▲



If you can send data packets but none are returned, it generally means the network is refusing to acknowledge your request.



Obtaining the DNS name and IP address and comparing access times between the two can determine whether Windows is experiencing DNS resolution issues.



The point at which a route trace hangs can help you determine where your request for network attention is being disrupted.



Revive A Dead Smartphone

Emergency CPR Techniques

What should you do when your smartphone decides to play dead? Resist the urge to throw it against the nearest wall and try one of these techniques instead.

Soft Reset

All phones have a soft reset function, which is similar to restarting your computer. Beware that performing a soft reset will cause you to lose any data that you don't have saved, but you will retain information previously stored on your smartphone.

T-Mobile G1. With the G1 powered off, hold the Home and End keys simultaneously. When you see a triangle with an exclamation point, press the Home and Back keys.

Motorola Backflip. Power the phone off. Remove and reinsert the battery, then power the phone back on.

Android (Other). All remaining Android models use a simple power cycle to perform a soft reset. Just turn the phone off and then back on again.

BlackBerry (QWERTY keyboard). Press and hold the ALT-CAP-Delete key combination. The display goes black for a second and your BlackBerry resets.

BlackBerry (SureType keyboard). Press the ALT-CAP and Right Shift-Delete keys. When the screen goes blank, release the keys.

BlackBerry (touchscreen). Turn the BlackBerry off and remove the battery for at least 30

seconds. Reinstall the battery and turn the device back on.

HTC FUZE, Touch Cruise, Touch Diamond. Insert the tip of the phone's stylus into the reset hole on the bottom of the device.

HTC HD2, Touch Pro, Touch Pro2. Use a small object, such as a toothpick or stylus, to press the reset button, located below the battery and SIM card slot.

iPhone (all models). Press and hold the Sleep/Wake button on the top of the iPhone and the Home button. Continue to hold both buttons (approximately 10 seconds) until the screen goes blank. You'll see the white Apple logo as the iPhone reboots.

Nokia (all models). Power the phone off and remove the battery for 30 seconds. Reinstall the battery and power the phone on. Alternately, you can enter the code *#7380# and select Yes.

Palm Pre. If the phone's menus are still active, select Device Info, Reset Options, then select Soft Reset. If the Palm Pre is locked up or frozen, hold the power button and cycle the ringer button on and off three times. If that doesn't work, press and hold the Orange, Sym, and R keys until the device reboots. Turn the phone off, remove the battery for 10 seconds, reinstall the battery, and power the phone up.

Palm Centro and Treo. Press and hold the Power/End key. Remove the battery from the phone for 30 seconds and then reinstall the battery and power on your phone.

All other smartphones. You can generally perform a soft reset by powering the phone off, removing the battery for 30 seconds, and powering the phone back on.

Hard Reset

A hard reset is a last-ditch option that returns your phone to its factory settings, which means you will lose all data and installed applications. Before you perform a hard reset, remove the memory card from your phone; that way you can recover data from the card later.

Android (all models with functioning menu systems). One of the following menu-based systems for performing a hard reset should work, depending on the phone and version of Android.

Open the application menu. Tap Settings, SD and Card Storage, Factory Data Reset, and follow the on-screen instructions.

From the Home screen, tap Menu, Settings, Privacy, and Factory Data Reset, and then follow the on-screen instructions.

From the Home screen, tap Menu, Settings, Security, and Factory Data Reset, and then follow the on-screen instructions.

When the menu system isn't functional, follow these phone-specific options to perform a hard reset.

Google Nexus One. Turn the phone off. Hold the Volume Down button and press the Power button. Use the Volume Down button to select Clear Storage from the list of options. Press the Power button and confirm your selection by pressing the Volume Up button.

T-Mobile G1. With the G1 powered off, press and hold the Home-End keys until you see a triangle with an exclamation point. Open the QWERTY keyboard and press ALT-W.

Motorola Droid. Turn the phone off. Press and hold the Power-X keys to force the phone into recovery mode. Next, press and hold the Volume Up-Camera key to display the recovery menu. Select Wipe Data/Factory Reset from the menu, and then select Reboot Phone.

Motorola Backflip. Power the phone off. Press and hold the Power and Camera buttons. When the phone turns on, release the Power button but continue to hold the camera button until prompted to release it. Next, press the Volume Down button. After 15 seconds, a yellow triangle with an exclamation point will appear. With your phone closed, tap the bottom-right corner of the display, and select

Wipe Data/Factory Reset. Press OK and follow the on-screen instructions.

BlackBerry (all models). Remove the battery for 30 seconds. Reinstall the battery and turn the phone back on.

HTC FUZE. With the device turned on, press and hold the Left and Right soft keys. While holding the keys, use the stylus to press and hold the Reset button on the bottom of the device near the USB port. Text on the display will ask you to confirm the reset.

HTC HD2. With the device powered off, press and hold the Volume Up and Volume Down buttons. With the volume buttons depressed, press and release the End/Power button. When a warning message displays, release the volume buttons. Next, press the Volume Up button to perform the reset. Pressing any other button cancels the reset.

HTC Touch Pro, Touch Pro2, Touch Diamond. With the device turned on, press and hold the Volume Down and Enter buttons. While holding the keys, use the stylus to press the Reset button, located under the battery cover. Continue to hold the Volume Down and Enter keys until a warning message displays. Release the Volume Down and Enter keys, and then press the Volume Up key to reset the phone. Pressing any other button cancels the reset.

iPhone (all models). From the Home screen, tap Settings, General, Reset, and Reset All Settings. This action resets all preferences but retains applications and data. If that doesn't work, from the Home screen, tap Settings, General, Reset, Erase All Content, and Settings. This will delete all data and applications and return the iPhone to factory conditions.

Nokia (all models). With your phone powered on or in standby mode, type *#7370# and select Yes when prompted. You may need your Lock Code for confirmation. The default lock code is 12345.

If your phone doesn't turn on, try pressing the On/Off button, *, and 3 simultaneously.

Palm Pre. Open Device Info, tap Phone Reset Options, and then tap Full Erase twice. If your Palm Pre is frozen and you're unable to use the menus to perform a reset, try running the latest version of webOS Doctor (www.palm.com/us/support/downloads/pre/recoverytool/webos_java_sprint) to troubleshoot and reset the device. Follow the on-screen instructions.

Palm Centro and Treo. Press and hold the Power On/Off button. While holding the button, remove the battery, wait 10 seconds, and then reinstall the battery. Continue to hold the Power button until you see the Palm Powered screen. Release the Power button. When the screen displays the "Erase all data?" query, press the Up button. ▲



Don't worry if it takes your BlackBerry several minutes to start up after a reset; this is normal.



The hard reset and soft reset procedures are the same for all iPhones.



If your Nokia smartphone doesn't turn on after you perform a hard reset, try pressing the On/Off button, *, and 3 simultaneously.



David Gurlé, general manager and vice president of the Skype for Business unit

Skype

SKYPE EDGES INTO THE BUSINESS WORLD

by Carmen Carmack

Many of us are familiar with Skype for making video calls over the Internet. All you need is a Web cam, a computer, and an Internet connection to communicate free with other Skype users. You can make video and voice calls, use IM, and transfer files and share screens.

What you may not know about Skype is that businesses are also using it to communicate and collaborate. The business version of Skype offers capabilities for organizations of all different types and sizes, with features such as mobile calling, the Skype Manager (www.skype.biz) management tool, and PBX-compatible Skype for SIP. To find out more, we spoke with David Gurlé, general manager and vice president of the Skype for Business unit. Answers have been edited for clarity and space.

Q. How are SMBs typically using Skype?

ANSWER: Skype is a rich set of communication solutions that enables businesses to collaborate, compete, and win in an ever-changing global marketplace. It changes the way businesses communicate with customers, partners, and employees. Surveys we've conducted indicate that nearly 37% of respondents are using Skype for business purposes.

The business version of Skype builds on Skype's rich calling features that can help businesses work smarter, such as Skype-to-Skype calls, video calls, calls to landline and mobile phones, online numbers, conference calling, screen sharing, sending/receiving

files, and IM/group IM, with as many as 200 people. Skype recently introduced Skype Manager, which makes it simple for businesses to deploy Skype efficiently and effectively in the workplace. It incorporates a centralized payment system, real-time analysis, and reporting tools. It also lets companies manage Skype user accounts and assign features.

Q. What are the primary benefits?

ANSWER: The feedback we have received from business users is that cost and time savings, simplicity, and increased productivity make Skype a great business communications tool. It delivers operational efficiencies, connects the mobile workforce, provides cost savings, and improves collaboration and communications among employees, partners, and customers. Skype delivers low setup costs and can be deployed quickly and easily. It can also help lower a business' carbon footprint by reducing travel while improving face-to-face relationships through high-quality video calling.

Q. Are there certain businesses that benefit more from using Skype?

ANSWER: According to Gartner, people are increasingly working at least part of their week away from the office. It predicts that by 2011, 46.6 million corporate employees globally will spend at least one day per week teleworking and 112 million people will spend at least one day per month working from home. Already, 84% of organizations surveyed have allowed some employees to work remotely. At least 50% of SMBs operate from more than one location and approximately 20% operate from six or more locations. With customers, partners, employees, and suppliers being spread out across numerous locations, the trend toward distributed workforces is creating increased pressure on businesses to invest in new types of communications tools.

Q. What is a Skype Online Number?

ANSWER: Online numbers are available for all Skype users. With an online number, a Skype

users' friends, family, or business contacts can call that number and only pay for a standard rate call—if they are in the same country as the user's online number—the online number uses the Internet to route the call and so saves them money.

Q. What do business travelers need to use Skype on a mobile phone?

ANSWER: Skype is now available on a number of mobile devices. Most recently, we worked with Verizon Wireless to make Skype mobile available to users of its 3G smartphones. Anyone with a Skype account can take advantage of Skype's low-cost calling plans for calls to cell phones and landlines domestically or internationally. Business travelers who have iPhones and iPod touches can also save on calling costs by downloading and using the free Skype for iPhone app that is available from the Apple App Store. Additionally, the Skype for Symbian application makes it easy for business travelers who are using Nokia phones to save on communications costs. Other Skype products, such as Skype To Go and Online Numbers, also help cut communications costs for business travelers.

Q. What is the cost of using Skype on a mobile phone?

ANSWER: Skype mobile, Skype for iPhone, and Skype for Symbian apps are free. Calls to and from other Skype users around the world are free. To make low-cost Skype calls to mobiles and landlines, Skype Credit or a Skype subscription is required. When using Skype mobile on compatible Verizon Wireless 3G smartphones, a Verizon voice plan is required to make free Skype-to-Skype calls. However, you will not be charged against your minutes when making or receiving Skype-to-Skype calls or international calls to landlines or mobiles at Skype's low global calling rates.

Q. Changing the focus, what costs savings or advantages does Skype for SIP provide?

ANSWER: Skype for SIP is a solution for connecting a company's existing SIP-enabled PBX to Skype. Companies with legacy TDM PBXs or key systems can also use a third-party gateway that has been certified as interoperable to connect to Skype for SIP. This way, Skype can be used to enable employees to communicate more efficiently by directing their outbound calls through their existing communications system to mobile phones and landlines around the world via Skype—right from their desk phones.

It also lets businesses receive inbound calls from the more than 560 million registered Skype users into their existing communications system where they can be handled or directed in the same way as any other inbound call. If they buy and associate Online Numbers with their PBX, they can also receive calls to the PBX through Skype from landline and mobile phones. This will also enable them to connect their Web site to their PBX for inbound calling via Skype using a global click-to-call button.

Q. With Skype for SIP, which calls are free vs. calls that incur charges?

ANSWER: All incoming Skype calls to a SIP-enabled PBX are free to people using Skype. Calls to landlines and mobiles made using Skype for SIP are billed at Skype's standard per minute calling rates and a small connection fee. To use Skype for SIP, a business needs to purchase a monthly channel subscription based on the number of concurrent calls it will be making or receiving with its SIP profile. Each channel that is purchased allows for one inbound or one outbound call at any time. A business can buy up to 300 channels per SIP profile. As part of the Skype for SIP Open Beta program, Skype has created a low introductory price for the monthly channel subscription of just \$6.95 per channel.

Q. What are some common customer issues, challenges, or misconceptions by businesses about Skype?

ANSWER: Some companies, specifically those that employ an IT or network manager, have asked us for more visibility as to how Skype works in a business environment. Since the release of

Skype 3.0 in 2006, we have enabled IT administrators to have more control over how they use Skype on their networks. We want businesses to be able to use Skype in ways that work for their companies and complies with their specific IT policies. We believe that Internet communications should be affordable and available to everyone.

Skype is safe for businesses. We understand that corporate network administrators have different security requirements than consumers, and they want to understand how Skype works. We have introduced a business client with an MSI installer that addresses many of these concerns. Plus, Skype will be publishing a newly revised "IT Administrator's Guide to Skype" to explain how Skype works on a corporate network, how secure it is, and how to implement and manage Skype's business tools. ▲



Happy Trails

by Calvin Clinchard

Intriguing Gear, New & Around The Bend

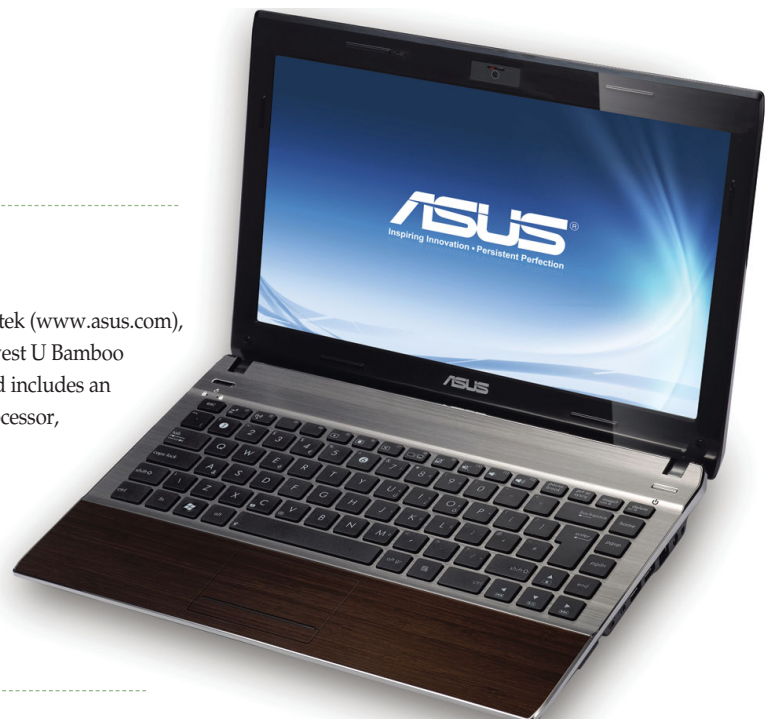


The Evo Asks, “iWhat?”

■ On the heels of the iPad and in the midst of the hullabaloo surrounding the latest iPhone release, Sprint (www.sprint.com) started shipping the first U.S. smartphone with WiMAX support, the HTC Evo 4G. WiMAX support means that if you're in one of the metropolitan areas running a WiMAX network, you can enjoy a better-than-3G connection. Far from a one-trick pony, however, the Evo 4G's other features make it worthy of a double-take. In addition to the standard high-end smartphone fare (Wi-Fi, GPS, stereo Bluetooth, microSD slot, 8MP camera), the Evo 4G runs the latest Google Android OS and includes a 1GHz processor, a front-facing camera, visual voice-mail, and an HDMI port for streaming HD video to an external source. Designed with work-life balance in mind, the Evo 4G is now available for \$199.99 after discounts and with a two-year contract from Sprint.

The New Bamboo

■ Bamboo notebook casing isn't an entirely new thing for Asustek (www.asus.com), but its Bamboo Series models are few and far between. The newest U Bamboo line includes five notebooks, each of which runs Windows 7 and includes an Intel Core i5 processor, 2GB of memory, an Nvidia graphics processor, and a 500GB hard drive. Of the five, the three slightly pricier models—the U33Jc, U43Jc, and U53Jc—differ mainly in display size, with 13.1-, 14.1-, and 15.1-inch displays, respectively. This trio also uses the fast new USB 3.0 standard; the other two use USB 2.0. All models should be available by the time you read this at base prices ranging from \$1,200 to \$1,360.



North America and Europe deployed more virtual servers than physical servers in 2008.

95% of data centers are deploying virtualization

88% of North American companies don't have a virtualization security strategy

TECHNOLOGY
Gartner VP Neil MacDonald: Virtualization will be the target of new security threats**

60% OF PRODUCTION VIRTUAL MACHINES ARE LESS SECURE THAN THEIR PHYSICAL COUNTERPARTS.*

THINK CONVENTIONAL SECURITY CAN PROTECT YOUR VIRTUAL ENVIRONMENT?

THINK AGAIN.

Enterprises around the world are relying on virtualization to increase data center efficiency and, unknowingly, leaving themselves more vulnerable. That's because conventional security isn't able to protect virtual machines or see the traffic between them – leaving data and networks exposed. Which is why, according to Gartner Group, in 2009 sixty percent of virtual machines are less secure than their physical counterparts. But with Trend Micro™ Enterprise Security, powered by the Trend Micro™ Smart Protection Network™ infrastructure, you can mitigate the risk and maximize the benefits of virtualization. It's a different kind of security that protects your physical and virtualized environments and helps set the foundation for your company to move confidently into the cloud.

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